Management Software

AT-S85 and AT-S97

Command Line Interface User's Guide

AT-MCF2000 Media Converter Series

Version 2.0.0

613-000789 Rev. C

Allied Telesis™

Contents

Figures

Tables

Preface

The AT-S85 and AT-S97 Management Software programs are the operating systems for the AT-MCF2000 Media Converter Modules and the AT-MCF2000M Management Module, respectively. This guide explains how to use the management programs to control and monitor the operating parameters of the media converter channels and modules of the AT-MCF2000 Series.

This Preface contains the following sections:

- ❐ "Document Conventions" on page 12
- ❐ "Where to Find Web-based Guides" on page 13
- ❐ "Contacting Allied Telesis" on page 14

⚠ **Caution**

The software described in this documentation contains certain cryptographic functionality and its export is restricted by U.S. law. As of this writing, it has been submitted for review as a "retail encryption item" in accordance with the Export Administration Regulations, 15 C.F.R. Part 730-772, promulgated by the U.S. Department of Commerce, and conditionally may be exported in accordance with the pertinent terms of License Exception ENC (described in 15 C.F.R. Part 740.17). In no case may it be exported to Cuba, Iran, Iraq, Libya, North Korea, Sudan, or Syria. If you wish to transfer this software outside the United States or Canada, please contact your local Allied Telesis sales representative for current information on this product's export status.

Document Conventions

This document uses the following conventions:

Note
Notes provide additional information.

⚠ **Caution**
Cautions inform you that performing or omitting a specific action may result in equipment damage or loss of data.

⚠ **Warning**
Warnings inform you that performing or omitting a specific action may result in bodily injury.

Where to Find Web-based Guides

The installation and user guides for Allied Telesis products are available in portable document format (PDF) on our web site at **www.alliedtelesis.com**. You can view the documents online or download them onto a local workstation or server.

For details about the features and functions of the AT-MCF2000 media converter, see the following installation guides on our web site:

- *AT-MCF2000 Multi-channel Media Converter Chassis Installation Guide* (part number 613-000573)
- *AT-MCF2000M Management Module Installation Guide* (part number 613-000709)
- *AT-MCF2000S Stacking Module Installation Guide* (part number 613-000708)

Contacting Allied Telesis

This section provides Allied Telesis contact information for technical support as well as sales and corporate information.

Online Support

You can request technical support online by accessing the Allied Telesis Knowledge Base: **www.alliedtelesis.com/support/kb.aspx**. You can use the Knowledge Base to submit questions to our technical support staff and review answers to previously asked questions.

Email and Telephone Support

For Technical Support via email or telephone, refer to the Support section of the Allied Telesis web site: **www.alliedtelesis.com**.

Warranty

All of the products in the AT-MCF2000 Media Converter Series have a 5 Year Warranty. All Allied Telesis warranties are subject to the terms and conditions set out in the Allied Telesis Limited Warranties on our web site at **www.alliedtelesis.com/warranty/default.aspx**.

Returning Products

Products for return or repair must first be assigned a return materials authorization (RMA) number. A product sent to Allied Telesis without an RMA number will be returned to the sender at the sender’s expense. For instructions on how to obtain an RMA number, go to the Support section on our web site at **www.alliedtelesis.com**.

Sales or Corporate Information

You can contact Allied Telesis for sales or corporate information through our web site at **www.alliedtelesis.com**.

Management Software Updates

New releases of the management software for our managed products are available from the following Internet sites:

- ❒ Allied Telesis web site: **www.alliedtelesis.com**
- ❒ Allied Telesis FTP server: **ftp://ftp.alliedtelesis.com**

If the FTP server prompts you to log on, enter “anonymous” as the user name and your email address as the password.

Chapter 1

Starting a Command Line Management Session

This chapter describes the basic characteristics of the management software. It contains the following sections:

Management Overview

The discussions in this section review the basic characteristics of the management software for the AT-MCF2000 Media Converter Series.

AT-S85 and AT-S97 Management Software

The modules in the AT-MCF2000 Series use two different operating systems. The AT-MCF2000M Management Module uses the AT-S97 Management Software and the AT-MCF2000 Media Converter Module Series, such as the AT-MCF2012LC and AT-MCF2012LC/1 Modules, use the AT-S85 Management Software.

All of your commands must be entered through the AT-S97 Management Software on the management module. Commands intended for a media converter module are automatically transferred by the management module to the appropriate module in the chassis or stack.

Features of the AT-S97 Management Software

Version 2.0.0 of the AT-S97 Management Software has the following features:

- Control over the operating parameters of the twisted pair and fiber optic ports of the media converter channels, including:
  - Auto-Negotiation
  - Speed
  - Duplex mode
  - MDI/MDI-X configuration
- Selection of a channel’s operating mode:
  - MissingLink™
  - Smart MissingLink
  - Link Test
- Rate limits for the ingress and egress packets on the ports of the media converter channels.
- Network Time Protocol (NTP) client for setting the system’s date and time from a NTP server on your network or the Internet.
- Stacking of up to eight AT-MCF2000 Chassis and 16 media converter modules.
- Telnet server for remote management without encryption from a management station on your network.
- Simple Network Management Protocol (SNMP) to manage a media converter by viewing and changing the management information base (MIB) objects on the device
- Secure Shell (SSH) server for remote management with encryption.

- Event log for monitoring the operations of the modules.
- Syslog client for transmitting event messages to a Syslog server.

AT-S97 Command Line Interface

The AT-S97 Management Software has a command line interface which can be accessed either locally through the RS-232 Terminal Port on the management module or remotely from your network using the Telnet or Secure Shell application protocol. To access the interface, you must log on to the management module with a valid manager name and password.

> **Note**
> The first management session of the chassis must be from a local management session. For instructions, refer to "Starting a Local Management Session" on page 20.

Manager Privilege Levels

The management software has three manager privilege levels:

- administrator
- read-write
- read-only

The privilege level of administrator is restricted to the management module's predefined manager account, which has the user name of "**manager**" and the default password "**friend.**"

The management module can support ten additional manager accounts with the privilege level of read-write and another ten accounts of read-only. The read-write level is nearly identical to the administrator level of the predefined manager account. It provides access to almost all of the same parameters settings, with a few exceptions, detailed in Chapter 14, "Manager Account Commands" on page 215. In contrast, the read-only privilege level restricts a network administrator to just viewing the parameter settings.

The privilege level required to perform a command is included in the descriptions of the commands in this manual.

> **Note**
> Only the predefined manager account can have the privilege level of administrator.

Saving Your Configuration Changes

The configuration settings of the management and media converter modules of a chassis or stack are stored in a series of files called configuration files in the modules' file systems. The most important of these files is the active master configuration file on the management module, which, as its name implies, contains all of the settings of a chassis or stack. What the configuration files do is they retain the parameter settings of the modules when a unit is power cycled or reset. Without the files, you would have to reconfigure the modules whenever you reset a device.

The modules do not automatically update their configuration files and the active master configuration file when you change a device's parameter, such as the speed of a port on a media converter module. Instead, you must initiate the update with the CONFIG SAVE command. This command instructs all the modules in a chassis, or stack, to update their configuration files to match their current settings. You should always perform this command after adjusting the parameter settings of the modules. Otherwise, your changes are discarded when you reset or power cycle the unit.

Note
Many of the chapters in this guide have a note on the first page reminding you to update the configuration files with the CONFIG SAVE command after entering your parameter changes.

For further information on configuration files and the CONFIG SAVE command, refer to Chapter 9, "Configuration File Commands" on page 141.

Setting Chassis ID Numbers

Commands that configure or display the parameters on a media converter module must include a chassis ID number. This parameter identifies the chassis with the media converter module. For example, to configure a port on a media converter module with the SYSTEM SET PORT command, you must include in the command the chassis ID of the unit with the module. See Figure 1.

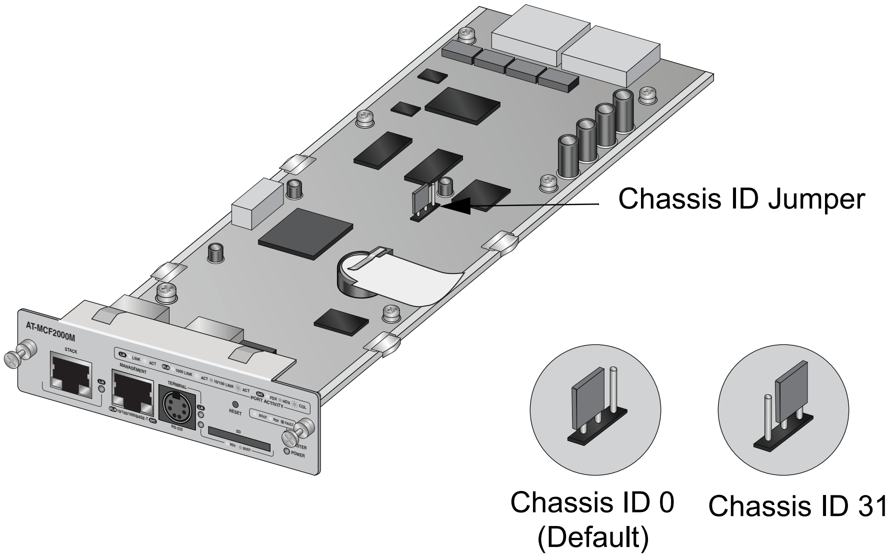


Figure 1. Chassis ID Jumper on the AT-MCF2000M Management Module

The ID number for a chassis is set with a jumper on the management module, shown in Figure 1 on page 18. The chassis ID number for a management module is either 0 or 31. The default setting is 0.

Within a stack, you assign the management module on the master unit with a chassis ID of 0. You assign all of the AT-MCF2000S Stacking modules on the slave chassis with a chassis ID of 1 through 30. For more information about stacking, see Chapter 2, "Stacking" on page 35.

To view the ID number of a chassis, issue this command:

```
system show cluster
```

For further information, see "Displaying the Chassis Modules" on page 28 or "SYSTEM SHOW CLUSTER" on page 99.

Starting a Local Management Session

Note
Local management sessions do not require an IP configuration on the AT-MCF2000M Management Module.

To start a local management session on the chassis, perform the following procedure:

1. Connect the DIN-8 connector on the RS-232 Serial Management Cable included with the AT-MCF2000M Management Module to the RS-232 Terminal port on the module, as shown in Figure 2.

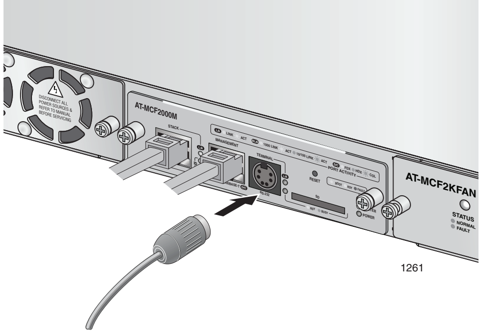


Figure 2. Connecting the RS-232 Serial Management Cable to the RS-232 Terminal Port

2. Connect the other end of the cable to an RS-232 port on a terminal or PC with a terminal emulator program.

3. Configure the terminal or terminal emulation program as follows:

   - Baud rate: 115,200 bps (The RS-232 Terminal port has a baud rate range of 9600 to 115,200 bps. The default is 115,200 bps. To adjust the baud rate, refer to “SYSTEM SET ASYNCHRONOUS” on page 58.)
   - Data bits: 8
   - Parity: None
   - Stop bits: 1
   - Flow control: None

Note
The port settings are for a DEC VT100 or ANSI terminal, or an equivalent terminal emulator program.

Note
The prompt "Hit any key to stop autoboot," displayed on the console when the management module is reset or power cycled, is for manufacturing purposes only and should be ignored. If you inadvertently display the manufacturing prompt (=>), type "bootapp" to launch the management software on the management module.

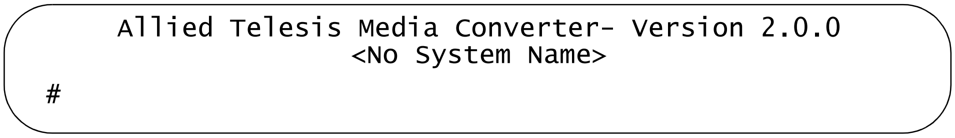
---

4. Press Enter.

   You are prompted for a user name and password.

5. Enter a user name and password. The management module has a predefined manager account with the privilege level of administrator. The account provides unlimited access to all the parameters on the management and media converter modules. To log in using this account, enter "**manager**" as the user name. The default password for the account is "**friend**." The user name and password are case sensitive.

   After you have logged in, the management software displays the command line interface, shown in Figure 3.



```
         Allied Telesis Media Converter- Version 2.0.0
                       <No System Name>
#
```

Figure 3. Command Line Interface Prompt

The symbol in the command line prompt reflects the access level of your manager account. The predefined manager account has the pound symbol (#) prompt. A read-write or read-only account has a dollar symbol ($) prompt. For information on the three manager privilege levels of the AT-S97 Management Software, refer to "Manager Privilege Levels" on page 17. For instructions on how to change a password or create additional manager accounts, refer to Chapter 14, "Manager Account Commands" on page 215.

You can now begin to manage the chassis. For suggestions on what to configure during the initial configuration, refer to "What to Configure First" on page 28.

Starting a Remote Telnet or Secure Shell Management Session

Review the following guidelines before starting a remote Telnet or Secure Shell (SSH) management session:

- ❐ The AT-MCF2000M Management Module must have an IP configuration. For instructions, refer to Chapter 4, “IP Configuration Commands” on page 47.
- ❐ The 10/100/1000Base-T Management port on the management module must be connected to a device on your network, such as a Fast Ethernet or Gigabit Ethernet switch. Remote management sessions are conducted through this port.
- ❐ The Telnet server or SSH server on the management module must be enabled. For instructions, refer to Chapter 11, “Telnet Server Commands” on page 195 or Chapter 13, “Secure Shell Server (SSH) Commands” on page 209.
- ❐ The remote Telnet or SSH client must be a member of the same network as the management module or have access to it through Layer 3 routing devices.
- ❐ If the management module and the remote Telnet or SSH client reside on different networks, the IP configuration on the module must include a default gateway address specifying the IP address of the routing interface of the first hop to reaching the remote client. For instructions, refer to Chapter 4, “IP Configuration Commands” on page 47.
- ❐ The management module can support 20 Telnet and 20 SSH management sessions, simultaneously.

To start a remote Telnet or SSH management session, perform the following procedure:

1. Enter the IP address of the AT-MCF2000M Management Module in the Telnet or SSH client on the remote workstation.

   The management software prompts you for a user name and password.

2. Enter a user name and password. The management module has a predefined manager account with the privilege level of administrator and unlimited access to all of the parameters on the management and media converter modules. To log in using this account, enter “**manager**” as the user name. The default password for the account is “**friend**.” The user name and password are case sensitive.

   The local management session starts and the command line interface prompt is displayed, as shown in Figure 3 on page 21.

For information on the three manager privilege levels of the AT-S97 Management Software, refer to “Manager Privilege Levels” on page 17. For instructions on how to change a password or create additional manager accounts, refer to Chapter 14, “Manager Account Commands” on page 215.

The section “What to Configure First” on page 28 has suggestions on what you should configure during the initial management session of the chassis.

SNMP Management Session

You can also manage the AT-MCF2000 chassis remotely using an Simple Network Management Protocol (SNMP) management program such as HP Openview. This method, however, does not use the management interface.

To manage the chassis from a management workstation using an SNMP management program, you need to load the Management Information Base (MIB) file, atMCF2000.mib, that was included with the AT-S85 and AT-S97 software onto the management workstation. (The MIB file is available from the Allied Telesis web site.)

This requires that you use a MIB compiler to compile the file. A familiarity with MIB objects is necessary for this type of management. To load the MIB file onto a management workstation, follow the instructions included with your MIB compiler. For instructions on how to compile the MIB file with your SNMP program, refer to your SNMP management documentation.

To establish a SNMP management session for a unit that is remotely managed, the chassis must have a management card and an IP address. Before performing the SNMP management session, note the followings:

- ☐ The 10/100Base-TX port on the management card must be connected to the network.
- ☐ The remote management workstation must reach the chassis through the subnet of the management card.

Quitting a Management Session

To quit a management session, enter **Exit** at the command prompt. You should always exit from a management session when you are finished managing a media converter. This can prevent unauthorized individuals from making changes to a unit's configuration if you leave your management station unattended. For information about how to use the console timer to automatically disconnect a management session, refer to "SYSTEM SET CONSOLE" on page 61.

Note
Failure to properly exit from a management session may block future management sessions until the console timer times out. For information on the console timer, refer to "SYSTEM SET CONSOLE" on page 61.

Command Line Interface Features

The command line interface supports the following features:

- Command history - You can scroll through a history of your commands with the up and down arrow keys.
- Context-specific help - Typing a question mark against the command line prompt displays a list of the command keywords. Additionally, typing a question mark when entering a command displays a list of legal parameters.
- Keyword abbreviations - Keywords can be recognized by typing an unambiguous prefix, for example, “sy” for “system.”
- Tab key - Pressing the Tab key fills in the rest of the keyword. For example, typing “mo” and pressing the Tab key enters “module.”

Command Formatting

The following formatting conventions are used in this manual:

- ❐ `screen text font` - This font illustrates the format of a command and command examples.
- ❐ *`screen text font`* - Italicized screen text indicates a variable for you to enter.
- ❐ [ ] - Brackets indicate optional parameters.
- ❐ | - Vertical line separates parameter options for you to choose from.

What to Configure First

This section has a few suggestions on what to configure when you are managing the chassis for the first time. The initial management session must be a local session. For instructions on how to start a local management session, refer to “Starting a Local Management Session” on page 20.

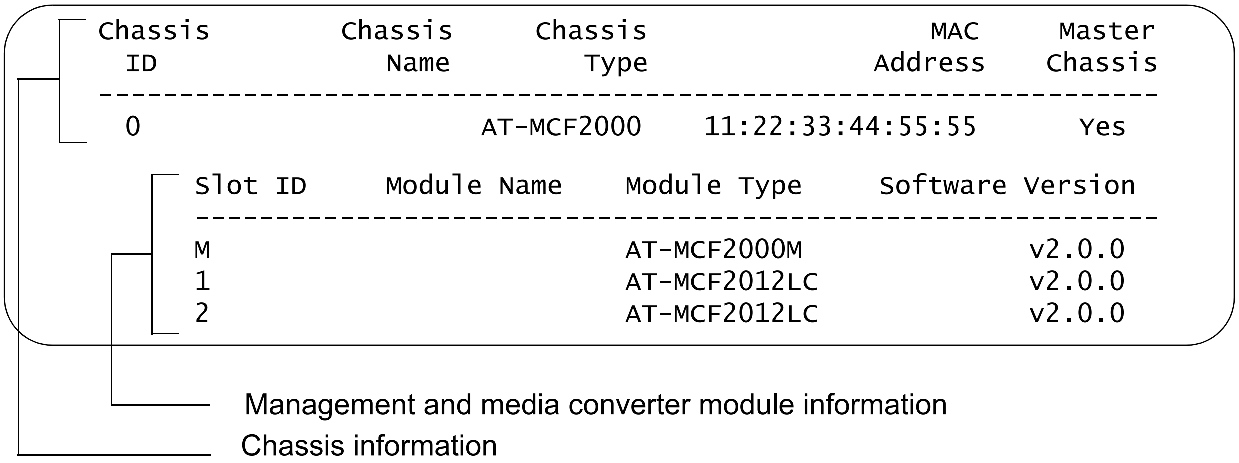
Note
Although the management module comes with the default IP address of 10.0.0.1 and subnet mask of 255.255.252.0, the initial configuration must be a local session because the module’s Telnet and SSH servers are initially disabled.

Displaying the Chassis Modules

After logging on, enter this command:

```
system show cluster
```

The command displays the management and media converter modules in the chassis. You can use this information to verify the modules in the unit. An example is shown in Figure 4.



```
Chassis        Chassis     Chassis                MAC     Master
  ID             Name         Type            Address    Chassis
-------------------------------------------------------------------
  0                     AT-MCF2000    11:22:33:44:55:55      Yes

      Slot ID     Module Name    Module Type     Software Version
      -------------------------------------------------------------
      M                          AT-MCF2000M             v2.0.0
      1                          AT-MCF2012LC            v2.0.0
      2                          AT-MCF2012LC            v2.0.0
```

Management and media converter module information

Chassis information

Figure 4. Displaying the Chassis Modules

For information about this command, refer to “SYSTEM SHOW CLUSTER” on page 99.

Note

To avoid possible compatibility problems between the management module and the media converter modules, Allied Telesis recommends that all modules in a chassis or stack use the same version of the AT-S85 and AT-S97 Management Software. If the modules shown in the SYSTEM SHOW CLUSTER command have different versions, you should upgrade the operating software on the modules. For instructions, Chapter 10, "File System Commands" on page 165.

Changing the Manager Password

Because the default password for the predefined manager account is included in this document, which is posted on our web site where anyone with a web browser can see it, you should change the password as part of the initial configuration to protect the unit from unauthorized access. To change the password, enter this command:

```
user set username=manager password
```

You are prompted to change the password. A password can be up to 16 alphanumeric characters and is case sensitive. Special characters, including spaces, question marks, and quotation marks, are permitted. You are prompted twice to verify the new password.

For information on how to create additional manager accounts, refer to Chapter 14, "Manager Account Commands" on page 215.

Creating a Master Configuration File

This step creates a master configuration file in the file system on the management module. The module uses the file to store your parameter changes. Without the file, the module cannot save your parameter settings and you will have to reenter them if you reset or power cycle the chassis.

This task has two steps. The first step creates the file with the CONFIG SAVE FILESYSTEM command. The format of the command is:

```
config save filesystem=system://chassis/slot/filename.cfg
```

The *chassis* variable is the ID number of the chassis. A chassis with a management module installed has a chassis ID of 0 or 31. This value is set with a jumper on the circuit board of the module. The chassis ID of a chassis with a stacking module is 1 through 30. The value is also set manually on the stacking module.To view this number, use the SYSTEM SHOW CLUSTER command.

The *slot* variable specifies the chassis slot that has the management module, signified by the letter "m."

And, finally, *filename*.cfg is the filename for the new master configuration file. The name can be up to 15 alphanumeric characters, not including the extension. Spaces are allowed, but a name with spaces must be enclosed in double quotes.

This example of the command creates the new master configuration file “mcf_chassis0.cfg” on a management module in a chassis with an ID number of 0:

```
config save filesystem=system://0/m/mcf_chassis0.cfg
```

For further information on this command, refer to “CONFIG SAVE FILESYSTEM” on page 158.

Now that you have created the master configuration file, you are ready to perform the second step and designate it as the module’s active master configuration file. This directs the management module to the appropriate master configuration file when saving your changes. (In some cases, the management module might have more than one master configuration file, such as a history of past configuration files, but only one of the files can be active at a time.) The command for designating the active master configuration file is the CONFIG SET command. Here is the format:

```
config set filesystem=system://chassis/slot/filename.cfg
```

The definitions of the variables in this command are the same as in the CONFIG SAVE FILESYSTEM command. Here is an example of the command that designates the “mcf_chassis1.cfg” file created in the previous command as the management module’s active configuration file:

```
config set filesystem=system://0/m/mcf_chassis1.cfg
```

Configuration filenames in both the CONFIG SAVE FILESYSTEM and CONFIG SET commands are case sensitive. For more information on this command, refer to “CONFIG SET” on page 160.

This completes the procedure for creating and designating a new active master configuration file on the management module. The management module can now save your parameter changes when you issue the CONFIG SAVE command.

Assigning an IP Configuration

Will you be remotely managing the chassis with the Telnet or Secure Shell (SSH) application protocol? Or, will the management module be performing any of the following management tasks?

- Uploading or downloading files to its file system from a TFTP server.
- Setting the date and time from a Network Time Protocol (NTP) server
- Sending events to a syslog server
- Sending or receiving TCP/IP ping requests from another network device
- Managing the device with SNMP

If so, the module must have an IP configuration with an IP address, subnet mask, and possibly a default gateway address on the management module. You can assign the IP configuration manually or activate the DHCP and BOOTP clients and have a DHCP or BOOTP server on your network supply the configuration, automatically. (If you choose the latter and want to know the MAC address of the chassis, refer to “Displaying the Chassis Modules” on page 28 or “SYSTEM SHOW CLUSTER” on page 99.)

The command for manually assigning an IP configuration to the management module is:

```
ip set ip-address=ipaddress subnetmask=mask
default-gateway=ipaddress
```

In this example, the management module is assigned the IP address 149.112.44.22, the subnet mask 255.255.255.0, and the default gateway 149.112.44.242:

```
ip set ip-address=149.112.44.22 subnetmask=255.255.255.0
default-gateway=149.112.44.242
```

For more information on this command, refer to “IP SET” on page 52.

If you want the management module to obtain its IP configuration from a DHCP or BOOTP server on your network, activate the DHCP and BOOTP clients with this command:

```
ip dhcp enable
```

For more information on this commands, refer to “IP DHCP ENABLE” on page 51.

Note
Be sure to connect the 10/100/1000Base-T Management port on the management module to your network before assigning an IP configuration to the module. The management module communicates with your network through this port.

Setting the Date and Time

The management module adds the date and time to the event messages logged in its event log. You can set the date and time manually or with a Network Time Protocol (NTP) server on your network or the Internet. The command for manually setting the date and time is:

```
system set clock date=mm/dd/yyyy time=hh:mm:ss
```

This example sets the date to April 11, 2007 and the time to 4:34 pm:

```
system set clock date=4/11/2007 time=16:34:0
```

If the date and time of the management module will be supplied by an NTP server, you must specify the IP address of the server and activate the NTP client. This command specifies the server's IP address:

```
ntp set server=ipaddress
```

The *ipaddress* variable is the IP address of the NTP server. This example specifies the IP address of the NTP server as 149.122.55.77:

```
ntp set server=149.122.55.77
```

After specifying the server's IP address, activate the NTP client with this command:

```
ntp enable
```

Note
Review the section "NTP Client Guidelines" on page 114 before activating the client.

Enabling the Telnet or Secure Shell Server

Will you be managing the chassis over the network from a remote workstation with the Telnet or SSH application protocol? If so, you must activate the appropriate server on the management module. To enable the Telnet server, enter this command:

```
telnet enable
```

To enable the SSH server, enter this command:

```
ssh enable
```

For information of the Telnet server commands, refer to Chapter 11, "Telnet Server Commands" on page 195. For information on the SSH commands, refer to Chapter 13, "Secure Shell Server (SSH) Commands" on page 209

Naming a Chassis

Naming a chassis makes it easier for you to identify it in the management software and may help you avoid the common mistake of performing a command or procedure on the wrong device. The command is SYSTEM SET CHASSIS and the format is:

```
system set chassis id=chassis name=name
```

The *chassis* variable is the ID number of the chassis. If you have a management module installed in the chassis, the chassis id is either 0 (the default) or 31. If you have a stacking module installed in your chassis, you can assign a range of 1 to 30 as the chassis ID. To view this number, use the SYSTEM SHOW CLUSTER command.

The *name* variable specifies a name of up to 20 alphanumeric characters for the chassis. Spaces are allowed, but a name with spaces must be enclosed in double quotes (" ").

This example assigns the name "Region 1 Traffic" to a chassis with an ID number of 1:

```
system set chassis id=1 name="Region 1 Traffic"
```

For more information on the SYSTEM SET CHASSIS command, refer to "SYSTEM SET CHASSIS" on page 59.

Saving Your Changes

This completes the initial configuration of the chassis. To update the configuration files on the modules with your changes, enter this command:

```
config save
```

For more information on the command, refer to "Saving Your Configuration Changes" on page 17 or Chapter 9, "Configuration File Commands" on page 141.

Note
If you do not issue the CONFIG SAVE command and later reset or power cycle the device, your changes will be discarded.

Note
To make identifying the chassis easier, Allied Telesis recommends attaching a label to the front panel of the unit with its chassis ID number, name, and MAC address. To view this information, use the SYSTEM SHOW CLUSTER command.

Chapter 2

Stacking

This chapter describes how to set up an AT-MCF2000 stack. It contains the following sections:

Overview

The AT-MCF2000 chassis and the media converter modules interconnect Ethernet networking devices over large distances by transferring Ethernet packets between twisted pair and fiber optic cables. The chassis can accommodate two multi-channel media converter modules as well as the optional AT-MCF2000M Management Module for either local (out-of-band) or remote (in-band) network management of the ports on the media converter modules.

You can use the AT-MCF2000 chassis as a standalone unit or you can connect additional units to create a stack. In an AT-MCF2000 stack, there is one master chassis and one to eight member chassis. With the management module installed in the master chassis, you can stack up to seven additional chassis that have the AT-MCF2000S Stacking Module installed. A stack merges and synchronizes the network operations of two or more AT-MCF2000 chassis to form a single, logical unit where management functions span all of the ports in the stack.

You can manage the AT-MCF2000 stack locally through the Terminal Port on the master unit of the stack or remotely using a Telnet or Secure Shell Client.

Stacking Guidelines

See the list of stacking guidelines below:

- The chassis are managed as a unit.
- The chassis are linked together with the stacking module.
- You can mix and match media converter modules within the stack.
- There is a limit of eight chassis (one master chassis and seven member chassis) and 16 media converter modules installed in one stack.
- To create a stack of media converters, daisy-chain the units with the Stack ports. The Stack port on the management module must be connected to Stack 1 or Stack 2 port on the stacking module in the next chassis. The remaining Stack port on the stacking module must be connected to the Stack 1 or Stack 2 port on the next chassis and so. For more information about cabling, see the *AT-MCF2000S Stacking Module Installation Guide.*

Required Modules

To be part of a stack, the master chassis in the stack must have the AT-MCF2000M Management Module installed. See Figure 5. In addition, each member chassis in the stack must have the AT-MCF2000S Stacking Module installed. See Figure 6.

Both modules are installed in the management module slot on the front panel of the chassis. For installation instructions, see the *AT-MCF2000M Management Module Installation Guide* and the *AT-MCF2000S Stacking Module Installation Guide*.

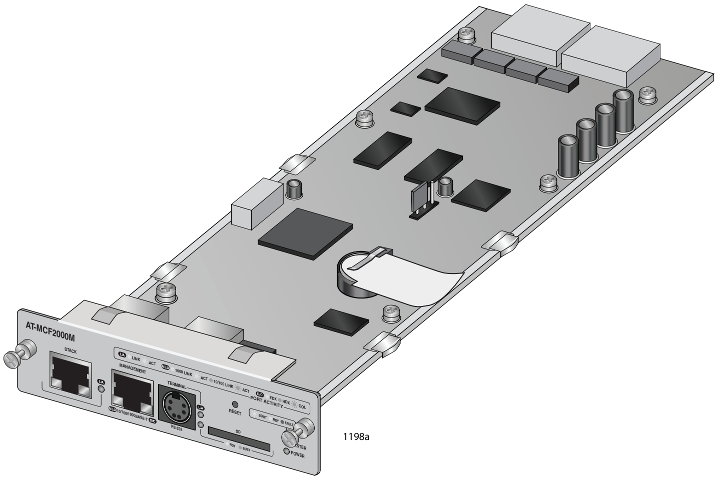


Figure 5. AT-MCF2000M Management Module

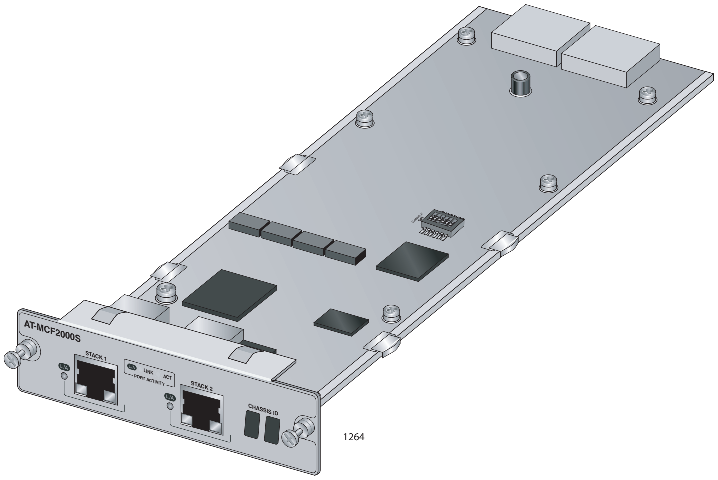


Figure 6. AT-MCF2000S Stacking Module

AT-S85 and AT-S97 Management Software Versions

To create a stack, the management, stacking, and media converter modules require Version 1.4.0 or later of the AT-S97 and AT-S85 Management Software. Earlier versions of the management software do not support this feature.

A stack supports all of the features described in “Command Line Interface Features” on page 26.

Setting Up Stacking

When creating a stack, you need to designate a master chassis and from one to seven member chassis. The management module has a chassis id of 0 which automatically designates this chassis as the master chassis of the stack by default. For instructions about how to move the jumper, see *“Setting Chassis ID Numbers” on page 18.*

To designate a member unit, set the chassis ID of each stacking module to 1 through 30 by moving DIP switches on the module. You must assign a unique chassis ID to each member chassis.

To view the chassis IDs of the master and member chassis, use the SHOW CLUSTER command. See “SYSTEM SHOW CLUSTER” on page 99.

Chapter 3

Basic Commands

This chapter describes basic AT-S97 software commands. It contains the following commands:

- ❒ "Question Mark '?' Key" on page 42
- ❒ "CLEAR" on page 43
- ❒ "EXIT" on page 44
- ❒ "HELP" on page 45
- ❒ "PING" on page 46

Question Mark ‘?’ Key

Syntax

```
?
```

Parameters

None.

Privilege Levels

Administrator, read-write, and read-only.

Description

Entering a question mark at the command line prompt displays a list and a brief description of the command line keywords. Entering a question mark after a keyword displays the available keyword parameters. Additionally, entering a question mark after a parameter displays the parameter’s class (that is, integer, string, etc.).

Examples

This command lists the command keywords:

```
?
```

This command displays the available parameters for the BOOT keyword:

```
boot ?
```

This command displays the class of the value for the SET parameter in the CONFIG command:

```
config set?
```

CLEAR

Syntax

```
clear
```

Parameters

None.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command clears the screen.

Example

```
clear
```

EXIT

Syntax

```
exit
```

Parameters

None.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command ends a management session.

Example

```
exit
```

HELP

Syntax

```
help
```

Parameters

None.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays information about how you can use the “?” and tab keys to simplify the entry of commands.

Example

```
help
```

PING

Syntax

```
ping ipaddress
```

Parameter

ipaddress	Specifies the IP address of the device to ping.

Privilege Levels

Administrator and read-write.

Description

This command tests for a network connection between the management module and a remote device by sending three TCP/IP ping requests. The results of the requests are displayed on your workstation. The following guidelines apply to this command:

- ❒ The management module must have an IP configuration. For instructions, see Chapter 4, “IP Configuration Commands” on page 47.
- ❒ The 10/100/1000Base-T Management port on the management module must be connected to your network. The ping requests are transmitted from this port.
- ❒ The management module must be a member of the same subnet as the remote device or have access to the device’s subnet through routers or other Layer 3 routing devices.
- ❒ If the management module and the remote device are members of different networks, the IP configuration on the module must include a default gateway address specifying the IP address of the routing interface of the first hop to reaching the device. For instructions, refer to Chapter 4, “IP Configuration Commands” on page 47.

Example

This command sends three ping requests from the management module to the remote device with the IP address 149.12.55.77:

```
ping 149.12.55.77
```

Chapter 4

IP Configuration Commands

This chapter describes how to assign an IP address to the AT-MCF2000M Management Module. This chapter contains the following sections:

Note
Remember to save your parameters changes in the active master configuration file with the CONFIG SAVE command. For information, refer to “Saving Your Configuration Changes” on page 17 or Chapter 9, “Configuration File Commands” on page 141.

Overview

The IP commands assign an IP configuration to the AT-MCF2000M Management Module consisting of an IP address, subnet mask, and default gateway address. An IP configuration is required if the module performs any of the following functions:

- Remote management using the Telnet and Secure Shell (SSH) application protocols.
- Managing the media converter with the Simple Network Management Protocol (SNMP)
- Uploading or downloading files to its file system from a TFTP server
- Downloading files to its file system from an Xmodem server
- Setting the date and time from a Network Time Protocol (NTP) server
- Sending events to a syslog server
- Sending or receiving TCP/IP ping requests from network devices

The IP configuration must include a default gateway address if the management module will communicate with a network device on a different subnet or network than itself. The address, which must be a member of the same network as the management module, defines the routing interface of the first hop to reaching the remote device. For example, the module must have a default gateway address if:

- You will be managing the unit remotely from a Telnet client on a different network from the management module
- If the unit will set its date and time from an NTP server on another network.

You can assign the IP configuration manually with the IP SET command or from a DHCP or BOOTP server on your network by activating the DHCP and BOOTP clients on the module with the IP DHCP ENABLE command.

If you assign the management module an IP configuration, you must connect the 10/100/1000Base-T Management port on the module to a network device, such as a Fast Ethernet or Gigabit Ethernet Switch. The AT-MCF2000M Management Module can only communicate with the network through the Management port. It cannot communicate through the ports on the media converter modules in the chassis.

Note
The forwarding of network traffic by the ports and channels on a media converter module is independent of the management module and does not require an IP configuration.

Command Summary

Table 1 summarizes the IP configuration commands.

Table 1. IP Configuration Commands

Command	Description
IP DHCP DISABLE on page 50	Deactivates the DHCP and BOOTP clients on the management module.
IP DHCP ENABLE on page 51	Activates the DHCP and BOOTP clients on the management module.
IP SET on page 52	Manually sets the IP configuration.
IP SHOW on page 54	Displays the IP address, subnet mask, and default gateway of the management module.

IP DHCP DISABLE

Syntax

```
ip dhcp disable
```

Parameters

None.

Privilege Levels

Administrator and read-write.

Description

This command deactivates the DHCP and BOOTP clients on the management module. When the clients are deactivated, the module’s IP configuration immediately returns to the default values. The default setting for the DHCP and BOOTP clients is disabled.

To manually assign an IP configuration to the management module, refer to “IP SET” on page 52.

Example

```
ip dhcp disable
```

IP DHCP ENABLE

Syntax

```
ip dhcp enable
```

Parameters

None.

Privilege Levels

Administrator and read-write.

Description

This command activates the management module's DHCP and BOOTP clients for setting the module's IP configuration from a DHCP or BOOTP server on your network. Refer to "Overview" on page 48 for background information on when to assign an IP configuration to the management module.

The management module queries first for a DHCP server. If it receives a response, it applies the IP configuration from the server to its IP parameters, and stops querying the network. If there is no response after seven attempts, the management module queries for a BOOTP server. If there is again no response, the management module stops its query efforts.

The default setting for the DHCP and BOOTP clients is disabled.

Note
If the module already has a manually assigned IP configuration, it will be overwritten by the values from the DHCP or BOOTP server.

Communications between the management module and the DHCP or BOOTP server are conducted through the module's 10/100/1000Base-T Management port. Consequently, this port must be connected to a network device, such as a Fast Ethernet or Gigabit Ethernet switch. The management module cannot communicate with a server through the ports on the media converter modules in the chassis.

Example

```
ip dhcp enable
```

IP SET

Syntax

```
ip set ip-address=ipaddress subnetmask=mask
default-gateway=ipaddress
```

Parameters

ip-address	Specifies an IP address for the AT-MCF2000M Management Module. The default value is 10.0.0.1.
subnetmask	Specifies a subnet mask for the management module's IP address. The mask can be of variable length. The default value is 255.255.252.0.
default-gateway	Specifies a default gateway for the management module. The default gateway must be a member of the same subnet as the module's IP address. The default value is 0.0.0.0.

Privilege Levels

Administrator and read-write.

Description

This command manually assigns an IP address, subnet mask, and default gateway address to the AT-MCF2000M Management Module. For information on when to assign an IP configuration to the module, refer to "Overview" on page 48.

Note
You cannot assign an IP configuration to the management module if the DHCP and BOOTP clients are active. You must first disable the clients with the IP DHCP DISABLE command. For information, refer to "IP DHCP DISABLE" on page 50. To determine the status of the clients, refer to "IP SHOW" on page 54.

Examples

This command assigns the IP address 149.22.67.8, subnet mask 255.255.255.224, and default gateway 149.22.67.247 to the AT-MCF2000M Management Module:

```
ip set ip-address=149.22.67.8 subnetmask=255.255.255.224
default-gateway=149.22.67.247
```

This command assigns the default gateway address 149.44.55.22 to the management module:

```
ip set default-gateway=149.44.55.22
```

This command removes the current IP address and subnet mask values without assigning new values:

```
ip set ip-address=0.0.0.0 subnetmask=0.0.0.0
```

IP SHOW

Syntax

```
ip show
```

Parameters

None.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays the management module’s IP address, subnet mask, and default gateway address, as shown in Figure 7.

```
IP Information:
  IP Address........... 149.25.42.11
  Subnet Mask.......... 255.255.255.0
  Gateway.............. 149.25.42.27
  DHCP................. Disable
```

Figure 7. IP SHOW Command

For further information, refer to the following sections:

- “Overview” on page 48 for background information on when to assign an IP configuration to the management module.
- “IP SET” on page 52 for instructions on how to manually assign these values.
- “IP DHCP DISABLE” on page 50 for instructions on how to activate the DHCP and BOOTP clients.

Example

```
ip show
```

Chapter 5

General System Commands

This chapter describes the commands that control and display basic parameters on the management module. This chapter contains the following sections:

Note
Remember to save your parameters changes in the active master configuration file with the CONFIG SAVE command. For information, refer to “Saving Your Configuration Changes” on page 17 or Chapter 9, “Configuration File Commands” on page 141.

Overview

The system commands are divided into two groups in this manual. The first set of commands, described in this chapter, control and display the basic parameters on the management module, such as the chassis' name and the date and time.

The commands in the second group control the individual ports and channels on the media converter modules. These functions include setting port parameters, such as speed and duplex mode, resetting media converter modules, and displaying status information on the modules in a chassis or stack. The system commands in this group are described in Chapter 6, "Port and Module Commands" on page 69.

Command Summary

Table 2 summarizes the general system commands described in this chapter.

Table 2. General System Configuration Commands

Command	Description
"SYSTEM SET ASYNCHRONOUS" on page 58	Sets the baud rate of the RS-232 Terminal port on the management module.
"SYSTEM SET CHASSIS" on page 59	Assigns a name to a chassis.
"SYSTEM SET CLOCK" on page 60	Manually sets the date and time.
"SYSTEM SET CONSOLE" on page 61	Sets the console timeout parameter for ending inactive management sessions.
"SYSTEM SET CONTACT" on page 62	Identifies the network administrator responsible for maintaining the chassis or stack.
"SYSTEM SET HOSTNAME" on page 63	Specifies a name for the stack.
"SYSTEM SET LOCATION" on page 64	Specifies the location of the stack.
"SYSTEM SHOW ASYNCHRONOUS" on page 65	Displays the baud rate of the RS-232 Terminal port on the management module.
"SYSTEM SHOW CLOCK" on page 66	Displays the date and time.

Table 2. General System Configuration Commands (Continued)

Command	Description
“SYSTEM SHOW CONSOLE” on page 67	Displays the console timeout parameter.
“SYSTEM SHOW INFO” on page 68	Displays the stack’s name, the name of the network administrator responsible for managing the units, and the location of the stack.

SYSTEM SET ASYNCHRONOUS

Syntax

```
system set asynchronous baudrate=2400|4800|9600|19200|115200
```

Parameters

baudrate	Sets the baud rate of the RS-232 Terminal port on the AT-MCF2000M Management Module. The default is 115,200 bits per second (bps).

Privilege Levels

Administrator and read-write.

Description

This command sets the baud rate of the RS-232 Terminal port on the AT-MCF2000M Management Module. This port is used for local management of the chassis. To view the port's current baud rate setting, refer to “SYSTEM SHOW ASYNCHRONOUS” on page 65.

Note
Changing the baud rate of the RS-232 Terminal port on the management module during a local management session ends the session. To resume managing the module, change the speed of the terminal or the terminal emulator program to the new speed of the RS-232 Terminal port.

The other settings of the RS-232 Terminal port listed here are not adjustable:

- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None

Example

This command sets the baud rate of the RS-232 Terminal port to 2,400 bps:

```
system set asynchronous baudrate=2400
```

SYSTEM SET CHASSIS

Syntax

```
system set chassis id=chassis name=name
```

Parameters

id	Identifies the ID number of the chassis which depends on the module installed in the management slot of the chassis. On a management module, the chassis ID number is 0 or 31. On a stacking module, the chassis ID can be from 1 to 30. To view the ID number of a unit, use the SYSTEM SHOW CLUSTER command. For instructions, refer to "SYSTEM SHOW CLUSTER" on page 99.
name	Specifies a name of up to 20 alphanumeric characters for the chassis. Spaces are permitted, but a name with spaces must be enclosed in double quotes (" "). To remove the current value without specifying a new value, enter "none".

Privilege Levels

Administrator and read-write.

Description

This command assigns a name to a chassis. Names can makes it easier to identify different devices. This command is different from the SYSTEM SET HOSTNAME command in that the latter assigns a name to an entire stack, while this command can assign names to the individual units in a stack. To view the current name of a chassis, refer to "SYSTEM SHOW CHASSIS" on page 96 or "SYSTEM SHOW CLUSTER" on page 99.

Examples

This command assigns the name "interconnect51" to a chassis with an ID number of 0:

```
system set chassis id=0 name=interconnect51
```

This command assigns the name "sjc connection" to a chassis with an ID number of 0:

```
system set chassis id=0 name="sjc connection"
```

SYSTEM SET CLOCK

Syntax

```
system set clock date=mm/dd/yyyy time=hh:mm:ss
```

Parameters

date	Specifies the current date in month/day/year format.
time	Specifies the current time in 24-hour, hour:minute:second format. You must include all three parts of the time.

Privilege Levels

Administrator and read-write.

Description

This command manually sets the management module's date and time which is added to events messages and SNMP traps. The module is able to maintain the date and time even when it is reset or power cycled because it has an onboard battery. To view the current date and time, use the SYSTEM SHOW CLOCK command. For instructions, see "SYSTEM SHOW CLOCK" on page 66.

To set the date and time using an Network Time Protocol (NTP) server, refer to Chapter 7, "Network Time Protocol Commands" on page 113.

Note
The date and time from an NTP server overwrites a manually set date and time.

You do not have to enter the CONFIG SAVE command to save the new date and time.

Examples

This command sets the date to April 11, 2007 and time to 4:34 pm:

```
system set clock date=4/11/2007 time=16:34:0
```

This command sets the time to 7:08 am and 25 seconds:

```
system set clock time=7:8:25
```

SYSTEM SET CONSOLE

Syntax

```
system set console timeout=value
```

Parameter

timeout	Specifies the console timer in minutes. The range is 0 to 60 minutes. The default is 10 minutes.

Privilege Levels

Administrator and read-write.

Description

This command sets the amount of time (in minutes) the management software waits before automatically ending an inactive local or remote management session. This parameter is referred to as the console timer. If there is no management activity for the duration of the timer, the management session is automatically logged off. This security feature can prevent unauthorized individuals from using your management station to alter the configuration settings of the media converter chassis if you step away from your system during a management session.

A value of 0 (zero) disables the console timer. Inactive management sessions are never timed out. This value should be used with caution. If you disable the console timer, you must remember to log off after every local and remote management session of the media converter. Or. future management sessions may be blocked.

To view the current console timer setting, refer to “SYSTEM SHOW CONSOLE” on page 67.

Note
The console timer is independent of the management module’s date and time and operates regardless of whether the date and time are set.

Example

This command sets the console timer to 25 minutes:

```
system set console timeout=25
```

SYSTEM SET CONTACT

Syntax

```
system set contact=contact
```

Parameter

contact	Specifies the name of the network administrator responsible for maintaining the chassis. The contact can be up to 25 alphanumeric characters. Spaces are allowed, but a name with spaces must be enclosed in double quotes (“ “). To remove the current value without specifying a new value, enter “none.”

Privilege Levels

Administrator and read-write.

Description

This command sets the name of the network administrator responsible for managing the chassis. To view this parameter’s current value, refer to “SYSTEM SHOW INFO” on page 68.

Example

This command sets a chassis’ contact to “Jane Smith:”

```
system set contact="Jane Smith"
```

SYSTEM SET HOSTNAME

Syntax

```
system set hostname=name
```

Parameter

hostname	Specifies a name of up to 25 alphanumeric characters for the stack. The host name is also used as the command line prompt. Spaces are permitted, but a host name with spaces must be enclosed in double quotes (“ “). To remove the current value without specifying a new value, enter “none.”

Privilege Levels

Administrator and read-write.

Description

This command assigns a name to a stack. The name is displayed at the top of the console screen during a command line management session. The first fourteen characters of the host name are also used as the command line prompt in the management interface. To view the current value for this parameter, examine the top of the console screen or the command line prompt. Or, use the SYSTEM SHOW INFO command, explained in “SYSTEM SHOW INFO” on page 68. To assign individual names to the chassis in a stack, refer to the SYSTEM SET CHASSIS command.

Examples

This command sets a stack’s name to “MCF2000 12a traffic:”

```
system set hostname="MCF2000 12a traffic"
```

This command removes a stack’s name without assigning a new value:

```
system set hostname=none
```

SYSTEM SET LOCATION

Syntax

```
system set location=location
```

Parameters

location	Specifies a location of up to 25 alphanumeric characters for the chassis or stack. Spaces are allowed, but a location with spaces must be enclosed in double quotes (“ “). To remove the current value without specifying a new value, enter “none.”

Privilege Levels

Administrator and read-write.

Description

This command sets the location of the chassis or stack. This information can be helpful in locating the different media converter units in your network. To view the current value for this parameter, refer to “SYSTEM SHOW INFO” on page 68.

Examples

This command sets a stack’s location to “Bldg 3, rm 212:”

```
system set location="Bldg 3, rm 212"
```

This command removes the current location without assigning a new value:

```
system set location=none
```

SYSTEM SHOW ASYNCHRONOUS

Syntax

```
system show asynchronous
```

Parameters

None.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays the baud rate setting of the management module’s RS-232 Terminal port, used for local management of the media converter chassis or stack. An example is shown in Figure 8.

```
Asynchronous Port (Console) Information:
    Baud Rate ............................ 115200
```

Figure 8. SYSTEM SHOW ASYNCHRONOUS Command

To configure the port’s baud rate, use the SYSTEM SET ASYNCHRONOUS command. For information, refer to “SYSTEM SET ASYNCHRONOUS” on page 58.

Example

```
system show asynchronous
```

SYSTEM SHOW CLOCK

Syntax

```
system show clock
```

Parameters

None

Privilege Levels

Administrator, read-write, and read-only

Description

This command displays the current date, time, and Real Time Clock (RTC) setting of the management module. This information is added to event messages and SNMP traps. See Figure 9.

```
System Clock Information
     Date ............. 06/04/2007
     Time ............. 03:35:25
     RTC Source......... none
```

Figure 9. SYSTEM SHOW CLOCK Command

To manually set the date and time, use the SYSTEM SET CLOCK command. If you set the time and date with this command, the RTC Source parameter is status is “manually.” For information, refer to “SYSTEM SET CLOCK” on page 60.

To set the date and time from an Network Time Protocol (NTP) server, refer to Chapter 7, “Network Time Protocol Commands” on page 113. When you connect the NTP server and enabled the NTP server in software, the RTC Source parameter is status is “NTP.”

Example

```
system show clock
```

SYSTEM SHOW CONSOLE

Syntax

```
system show console
```

Parameters

None.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays the setting for the console timer. This parameter controls the amount of time (in minutes) that the management software waits before automatically ending an inactive local or remote management session. The management software automatically logs off the session if the console timer expires without any management activity. This security feature can prevent unauthorized individuals from using your management station to change the configuration of the media converter chassis should you step away from your system during a management session.

A value of 0 (zero) disables the console timer. Inactive management sessions are never timed out. This value should be used with caution. If you disable the console timer, you must always remember to log off after every local or remote management session of the media converter, or future management session may be blocked.

To set the console timer setting, refer to “SYSTEM SET CONSOLE” on page 61.

Example

```
system show console
```

SYSTEM SHOW INFO

Syntax

```
system show info
```

Parameters

None.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays the stack’s name, the name of the network administrator responsible for managing the units, and the location of the stack, as shown in Figure 10.

```
System Information
     Hostname ............ Engineering MCF
     Contact ............. Jane Smith
     Location ............ Bldg 3, Fl 1, Closet 122
```

Figure 10. SYSTEM SHOW INFO Command

To configure these parameters, see the following commands:

- “SYSTEM SET HOSTNAME” on page 63
- “SYSTEM SET CONTACT” on page 62
- “SYSTEM SET LOCATION” on page 64.

Example

```
system show info
```

Chapter 6

Port and Module Commands

This chapter describes the system commands that control the parameters on the ports and channels on the media converter modules. This chapter contains the following sections:

Note
Remember to save your parameters changes in the active master configuration file with the CONFIG SAVE command. For information, see “Saving Your Configuration Changes” on page 17 or Chapter 9, “Configuration File Commands” on page 141.

Overview

The system commands are divided into two groups in this manual. The first group of commands, described in Chapter 5, “General System Commands” on page 55, display and control the basic parameters on the management module, such as the chassis’ name and the date and time.

The system commands described in this chapter control the parameters on the ports and channels on the media converter modules. Functions include setting port speed and duplex mode, resetting media converter modules, and displaying status information on the modules of a chassis.

Command Summary

Table 3 summarizes the port and module configuration commands.

Table 3. Port and Module Commands

Command	Description
“SYSTEM RESET CHASSIS” on page 72	Performs a soft reset on the management module and media converter modules in a chassis by initializing the AT-S85 and AT-S97 Management Software.
“SYSTEM RESET CLUSTER” on page 74	Returns the parameter settings on the management module and media converter modules in the chassis or stack to the default values.
“SYSTEM RESET MODULE” on page 76	Performs a soft reset on individual modules in a chassis by initializing the module’s AT-S85 or AT-S97 Management Software.
“SYSTEM SET INTERFACE” on page 79	Sets the operating mode of the channels on a media converter module.
“SYSTEM SET MODULE” on page 86	Assigns a name and temperature threshold to a module.
“SYSTEM SET PORT” on page 89	Configures the parameter settings of the ports in a media converter channel.

Table 3. Port and Module Commands (Continued)

Command	Description
“SYSTEM SHOW CHASSIS” on page 96	Displays the model names and slot assignments of the management and media converter modules in a chassis, as well as the chassis’ module name and MAC address.
“SYSTEM SHOW CLUSTER” on page 99	Displays the model names and slot assignments of the management and media converter modules in the chassis of a stack, as well as the chassis’ module names and MAC addresses.
“SYSTEM SHOW INTERFACE” on page 101	Displays the parameter settings of the ports of the channels on a media converter module.
“SYSTEM SHOW MODULE” on page 108	Displays status information about the media converter, power supply, fan, and management modules in the chassis.

Note
The SYSTEM RESET CHASSIS, SYSTEM RESET CLUSTER and SYSTEM RESET MODULE commands may interrupt the flow of network traffic through the ports and channels of the media converter modules in a chassis or stack. Review the information in the command descriptions before performing these commands.

SYSTEM RESET CHASSIS

Syntax

```
system reset chassis id=chassis
```

Parameters

id	Identifies the ID number of the chassis to reset. To view a unit’s ID number, use the SYSTEM SHOW CLUSTER command. For instructions, see “SYSTEM SHOW CLUSTER” on page 99.

Privilege Levels

Administrator and read-write.

Description

This command resets all the modules, both media converter modules and the management module, in a chassis by initializing the modules’ AT-S85 and AT-S97 Management Software. You might reset a chassis if you are experiencing a problem with its modules.

Note
Resetting a media converter module may result in the loss of some network traffic.

Note
When reset, the management module is unresponsive to commands for approximately one minute while it initializes the AT-S97 Management Software.

Note
When reset, a media converter module immediately resumes forwarding network traffic through its ports and channels using its default settings while it initializes its AT-S85 Management Software, a process that takes approximately one minute to complete. The module is unresponsive to management commands during the initialization process. At the completion of the process, the module configures its ports and channels according to the settings in the active master configuration file on the management module.

Note the following before performing this command:

- ❒ The command does not affect power supply or fan modules.
- ❒ Resetting the chassis ends your management session. To continue managing the unit, you must reestablish the session after the management module has initialized its AT-S97 Management Software. The initialization process takes approximately one minute to complete.

Note
Parameter settings that you have not saved to the active master configuration file on the management module are discarded during the reset. To save your changes, use the CONFIG SAVE command. For instructions, refer to "CONFIG SAVE" on page 157.

- ❒ To reset individual modules in a chassis, refer to "SYSTEM RESET MODULE" on page 76.

Example

This command resets a chassis with an ID number of 0:

```
system reset chassis id=0
```

SYSTEM RESET CLUSTER

Syntax

```
system reset cluster
```

Parameters

None.

Privilege Level

Administrator.

Description

This command returns the parameter settings on the management and media converter modules in a chassis or stack to the default values.

Note
This command deletes all of the master and auxiliary configuration files in the file systems of the modules in the chassis, and so should be used with caution. To retain any master configuration files on the management module, you must upload them from the module to a TFTP server before issuing this command. For instructions, refer to “FILE UPLOAD” on page 191.

Note
The command involves a reset of the media converter modules in the chassis or stack. Some network traffic may be discarded by the modules.

Note
The management module is unresponsive to commands for approximately one minute while it initializes the AT-S97 Management Software.

Note
The media converter modules in the chassis immediately resume forwarding network traffic through their ports and channels using the default settings. However, they are unresponsive to management commands for approximately one minute while they initialize their AT-S85 Management Software.

After performing this command, you must do the following before you can save new parameter changes:

1. Create a new master configuration file using the CONFIG SAVE FILESYSTEM command or download a previously saved file from a TFTP server. For instructions on the former, refer to "Creating a Master Configuration File" on page 29 or "CONFIG SAVE FILESYSTEM" on page 158. For instructions on downloading a file, refer to "FILE DOWNLOAD" on page 176.

2. Designate the file as the management module's active master configuration file with the CONFIG SET command. For instructions, refer to "CONFIG SET" on page 160.

3. To configure the modules according to the parameter settings in a master configuration file downloaded from a TFTP server, issue the CONFIG RUN command. For instructions, refer to "CONFIG RUN" on page 155.

Note the following before performing this command:

- ❐ The current date and time are retained.
- ❐ The command does not affect power supply or fan modules.
- ❐ This command ends your management session. To continue managing the unit, you must reestablish the session after the management module has initialized its AT-S97 Management Software. The initialization process takes approximately one minute to complete.

Example

This command deletes all of the master and auxiliary configuration files on the management and media converter modules in a chassis or stack and returns the parameter settings to the default values:

```
system reset cluster
```

SYSTEM RESET MODULE

Syntax

```
system reset module id=chassis/slot
```

Parameters

id	Identifies the media converter module or management module to reset. The ID number consists of the following parts:

chassis	Identifies the ID number of the chassis. The chassis ID number depends on which module is installed in the management slot of the chassis. When a management module is installed in this slot, the chassis ID number is 0 or 31. When a stacking module is installed in this slot, the chassis ID can be from 1 to 30.
slot	Specifies the letter or ID number of the slot with the module. Possible values are:

m	Identifies the management module slot which contains either the AT-MCF2000M Management Module or the AT-MCF2000S Stacking Module.
1 or 2	Specifies a slot number of a media converter module. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.

To view the ID and slot numbers of a chassis, refer to “SYSTEM SHOW CHASSIS” on page 96 or “SYSTEM SHOW CLUSTER” on page 99.

Privilege Levels

Administrator and read-write.

Description

This command performs a soft reset on a module in a chassis by initializing the AT-S85 or AT-S97 Management Software. You might reset a module if it is experiencing a problem.

Note
Resetting a media converter module may result in the loss of some network traffic.

Note
When reset, a management module is unresponsive to commands for approximately one minute while it initializes the AT-S97 Management Software.

Note
When reset, a media converter module immediately resumes forwarding network traffic through its ports and channels using its default settings while it initializes its AT-S85 Management Software, a process that takes approximately one minute to complete. The module is unresponsive to management commands during the initialization process. At the completion of the process, the module configures its ports and channels according to the settings in the active master configuration file on the management module.

Note the following before performing this command:

- ☐ This command can reset only one module at a time.
- ☐ This command can reset the management module or a media converter module. It cannot reset a power supply or fan module, or the AT-MCF2000S Stacking Module.
- ☐ Resetting the AT-MCF2000M Management Module ends your management session. To continue managing the chassis, you must reestablish the session after the module has completed initializing its software. The process takes about one minute.
- ☐ Resetting the AT-MCF2000M Management Module does not affect the media converter modules in the chassis.
- ☐ If you are resetting a media converter module, you can use the SYSTEM SHOW CLUSTER or SYSTEM SHOW CHASSIS command to determine when the module has completed the initialization process.
- ☐ To reset all of the media converter modules in a chassis with just one command, use the SYSTEM RESET CHASSIS command. For instructions, refer to “SYSTEM RESET CHASSIS” on page 72.

Examples

This command resets the media converter module in slot 2 in a chassis with an ID number of 1:

```
system reset module id=1/2
```

This command resets the AT-MCF2000M Management Module installed:

```
system reset module id=0/m
```

This command resets the media converter module in slot 1 in a chassis with an ID number of 30:

```
system reset module id=30/1
```

SYSTEM SET INTERFACE

Syntax

```
system set interface id=chassis/slot[/channel]
opmode=link-test|ml|sml
```

Parameters

id	Specifies a media converter module or a channel. The ID consists of the following parts:

chassis	Identifies the ID number of the chassis. The chassis ID number depends on which module is installed in the management slot of the chassis. When a management module is installed in this slot, the chassis ID number is 0 or 31. When a stacking module is installed in this slot, the chassis ID can be from 1 to 30.	
slot	Specifies the ID number of the slot with the module. Possible values are:	
	1 or 2	Specifies a slot number of a media converter module. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.
channel	Specifies the number of the channel. Possible values are:	
	1 to 12	Specifies a channel on the AT-MCF2012LC and AT-MCF2012LC/1 Modules. Channel 1 consists of twisted pair port 1 and fiber topic port 1, channel 2 of twisted pair port 2 and fiber topic port 2, and so on. You can specify only one channel at a time. Or, omit this parameter to set all the channels on a media converter module to the same operating mode.

To view the ID and slot numbers of a chassis, refer to "SYSTEM SHOW CHASSIS" on page 96 or "SYSTEM SHOW CLUSTER" on page 99. To view the channels, refer to "SYSTEM SHOW INTERFACE" on page 101.

opmode	Specifies the operating mode for the channel. Available settings are:

link-test	Specifies the Link Test mode. This is the default setting.
ml	Specifies the MissingLink™ mode.
sml	Specifies the Smart MissingLink mode.

Privilege Levels

Administrator and read-write.

General Description

This command sets the operating mode of the media converter channels on a media converter module. Different channels on the same media converter module can be set to different operating modes. None of the operating modes interfere with the flow of network traffic through the ports of a channel and can be used during normal network operations. To view a channel's current operating mode, refer to "SYSTEM SHOW INTERFACE" on page 101.

Description of the Link Test Mode

Contrary to its name, the Link Test operating mode does not test anything. Rather, it simply reflects the link status of a port on the port's Link LED and in the SYSTEM SHOW INTERFACE command. For example, when a port in a media converter channel running in this mode has a valid link to a network device, its Link LED is on and its status in the SYSTEM SHOW INTERFACE command is online. Conversely, when a channel port operating in this mode does not have a link, its Link LED is off and its status in the SYSTEM SHOW INTERFACE command is offline.

This mode is typically used when the network devices connected to the ports of a channel cannot take advantage of the features of the MissingLink mode, or when you want to use the Link LEDs or the SYSTEM SHOW INTERFACE command to troubleshoot a network problem with a channel. This operating mode is also useful after the installation of a media converter module to verify whether the ports of a channel have established a link with a network device.

Description of the MissingLink Mode

In the MissingLink mode, the two ports of a channel share their "link" status with each other so that both ports of a channel and, consequently, the network devices connected to the ports, are always aware of a change to the status of the link of the companion port in a channel. When a channel in the MissingLink mode detects the loss of a link on one of its ports, it replicates the loss on the companion port in the same channel by disabling the transmitter on the companion port. This notifies the network device connected to the port of the loss of the link on the other channel port. Without the MissingLink mode, a network device connected to a channel port is unaware of a loss of a link on its companion port in the channel, because its link to the media converter is otherwise unaffected. In other words, the MissingLink mode does not allow a port in a channel to form a link with its network device unless the companion port can also establish a link with its device.

When the link is reestablished on a channel port, the MissingLink mode automatically reactivates the transmitter on the companion port so that both network devices can again forward traffic to each other through the two ports of the media converter channel.

The value to this type of fault notification is that some network devices, such as managed Fast Ethernet switches, can respond to the loss of a link on a port by performing a specific action. For example, the network device might send a trap to a network management station, and so alert the network administrator of the problem. Or, if the device is running a spanning tree protocol, it might seek a redundant path to a disconnected node.

Here is an example of how the MissingLink mode works. Assume that two ports of a channel are connected to two Fast Ethernet switches, one local and the other remote. Switch A, the local switch, is connected to the twisted pair port of the channel, while Switch B, the remote device, is connected to the fiber optic port. If the link to Switch A is lost on the twisted pair cable, the media converter disables the transmitter on the fiber optic port in the same channel to signal Switch B of the loss of the link to Switch A. This notifies Switch B of the problem so it too, along with Switch A, can take remedial action, such as activating a redundant path if it is running a spanning tree protocol or sending an SNMP trap to a management workstation. Without the MissingLink mode, Switch B would continue to assume it still has a valid link to the remote device on the other side of the media converter channel since its link to the port on the channel is still valid, though no remote traffic is received.

In the example, the initial loss occurred on the twisted pair port. But the mode operates the same when the initial loss of the link is on the fiber optic port of a channel. Here, the transmitter on the twisted pair port is disabled to notify the node connected to that port of the loss of the link on the fiber optic port.

The states of the ports in a channel running in this mode operate in tandem. Either both ports have a link or neither port does. This is reflected on the Link LEDs and in the SYSTEM SHOW INTERFACE command. If both ports can form a link with their respective network device, then their Link LEDs will both be on and their status in the SYSTEM SHOW INTERFACE command will be Online. If one or both ports cannot establish a link, then their Link LEDs will both be off and their status in the SYSTEM SHOW INTERFACE command will be Offline.

This operating mode is useful when the network devices connected to the ports of a channel can react to a loss of a link on a port, such as managed Fast Ethernet switches running SNMP or a spanning tree protocol. Conversely, the MissingLink mode is of little value if the network devices of a channel cannot react to a lost link. In the latter scenario, the Link Test mode would probably be a better operating mode for a channel during normal network operations.

Furthermore, Allied Telesis does not recommend using the MissingLink mode when troubleshooting a network problem that may have its roots with a link problem. The MissingLink mode does not allow you to use the port’s Link LEDs or the SYSTEM SHOW INTERFACE command to diagnose the problem, since neither port will show a link. Rather, the Link Test and the Smart MissingLink modes are more useful when troubleshooting a link problem.

Description of the Smart MissingLink Mode

The Smart MissingLink mode, the third operating mode of the media converter channels, is nearly identical in terms of functionality to the MissingLink mode. It, too, enables the two ports of a channel to share the “Link” status of their connections.

The difference is rather than completely shutting off the transmitter of a port when its companion port in a channel loses its link, this operating mode pulses the port’s transmitter once a second. This signals the port’s ability to still establish a link to its network device and that the loss of the link originated on the companion port in the channel.

The advantage of this operating mode over the MissingLink mode is that you can use the Link LEDs and the SYSTEM SHOW INTERFACE command to troubleshoot a link failure with the ports of a channel. A port’s Link LED starts to flash when its companion port cannot establish a link with its network device and the port’s status changes to TX SML in the SYSTEM SHOW INTERFACE command.

Here is an example of how the Smart MissingLink mode works. Assume that the fiber optic port in a media converter channel lost its link to its network device while the channel was in the Smart MissingLink operating mode. The mode would respond by pulsing the transmitter on the twisted pair port of the channel about once a second. The port’s Link LED would flash and its status would change to TX SML in the SYSTEM SHOW INTERFACE command as a signal that the failure originated on the fiber optic port of the channel. When the connection is reestablished on the fiber optic port, the twisted pair port resumes normal operations so that the two ports can again forward traffic to each other.

The operating mode functions the same if the failure starts on the twisted pair port. Here, the mode pulses the transmitter on the fiber optic port.

As with the other two channel operating modes, this mode does not interfere with the flow of network traffic through the ports of a channel and so can be used during normal network operations of a media converter channel. However, you might want to limit its use to diagnosing a link failure, particularly if the network devices connected to the ports are managed devices. This is because the pulsing of the transmitter on a port and the constantly changing status of a link could prove problematic for some managed devices. For example, the device might send a constant stream of SNMP traps or, if the device is running a spanning tree protocol, the protocol may become confused as the status of the device's link to the media converter constantly changes.

Mode Select Button

On the front panel of the media converter module is a Mode Select button that you can use to manually set the operating mode of a channel. Turning the button up or down toggles through the channels on the module and pressing it selects a channel's operating mode. The selected channel is identified by the CH LEDs on the module and the operating mode by the LT (Link Test), ML (MissingLink), and SML (Smart MissingLink) LEDs. For further information, refer to the *AT-MCF2012LC and AT-MCF2012LC/1 Media Converter Modules Installation Guide*.

In the AT-S85 Management Software, a media converter module automatically updates its auxiliary configuration file in its file system whenever you set a channel's operating mode with the Mode Select button. This enables a module in an unmanaged chassis to retain its channel operating mode settings even when it is moved to another slot or when a chassis is power cycled.

However, if a chassis has the AT-MCF2000M Management Module or is part of a stack, the master configuration file on the management module is not automatically updated when a channel's operating mode is set with the Mode Select button. Rather, you must initiate the update with the CONFIG SAVE command from a local or remote management session. Otherwise, the settings in the auxiliary configuration file on the module are overwritten by the master configuration file on the management module the next time the module or chassis is reset.

For further information on configuration files, refer to Chapter 9, "Configuration File Commands" on page 141.

Operating Mode Guidelines

The following guidelines apply to using the channel operating modes:

- The channels on a media converter module can be set to different operating modes.
- The operating modes do not block or interfere with the flow of traffic between the two ports of a channel during normal network operations.
- The MissingLink mode is intended for situations where the ports of a channel are connected to managed devices, such as managed Fast Ethernet switches, that can react to the loss of a link and perform a specific action, such as send out an SNMP trap or seek a redundant path using a spanning tree protocol.
- Allied Telesis does not recommend using the Smart MissingLink mode on a channel connected to managed devices during normal operations of the channel. As explained earlier, this mode pulses the transmitter of a channel port when the link is lost on the companion port, which might cause problems for a managed device.
- The Link Test and Smart MissingLink modes are particularly useful when troubleshooting a link failure on a channel port. These modes allow you to use the Link LEDs on the ports and the SYSTEM SHOW INTERFACE command to identify the port in the channel that cannot establish a link with its network device.

Examples

This command sets all the channels on the media converter module in slot 1 to the Smart MissingLink mode. The chassis has the ID number of 0:

```
system set interface id=0/1 opmode=sml
```

This command sets channel 6 (twisted pair port 6 and fiber optic port 6) on the media converter module in slot 2 to the MissingLink mode. The chassis has the ID number of 0:

```
system set interface id=0/2/6 opmode=ml
```

This command sets channel 8 (twisted pair port 8 and fiber optic port 8) on the media converter module in slot 1 to the Link Test operating mode. The chassis has an ID number of 0:

```
system set interface id=0/1/8 opmode=link-test
```

SYSTEM SET INTERFACE PORTNAME

Syntax

```
system set interface id=c/b/pp portname=string
```

Parameters

id	Specifies a media converter module or a channel. The ID consists of the following parts:		
	c	Identifies the ID number of the chassis. The chassis ID number depends on which module is installed in the management slot of the chassis. When a management module is installed in this slot, the chassis ID number is 0 or 31. When a stacking module is installed in this slot, the chassis ID can be from 1 to 30.	
	b	Specifies the ID number of the line card. Possible values are:	
		1 - 4	Specifies a slot number of a media converter module. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.
	pp	Specifies the port pair. There are 12 port pairs per module. Choose a value between 1 and 12. You cannot specify more than one port pair.	
portname	Specifies a port name of up to 20 alphanumeric characters.		

Privilege Levels

Administrator and read-write.

General Description

This command allows you to name each port pair in the chassis. A port pair consists of both the twisted pair port and the fiber optic port for the specified port number.

Example

This command sets the name of the port pair 7 (for both the twisted pair port 7 and the fiber optic port 7) on module 2 in chassis 1 to “Lamborghini:”

```
system set interface id=1/2/7 portname=Lamborghini
```

SYSTEM SET MODULE

Syntax

```
system set module id=chassis/slot name=name
temperature-threshold=value
```

Parameters

id	Specifies a module in the chassis. The command can configure only one module at a time. The ID consists of the following parts:		
	chassis	Identifies the ID number of the chassis. The chassis ID number depends on which module is installed in the management slot of the chassis. When a management module is installed in this slot, the chassis ID number is 0 or 31. When a stacking module is installed in this slot, the chassis ID can be from 1 to 30.	
	slot	Specifies the number or letter of the chassis slot with the module. Possible values are:	
		m	Identifies the management module slot. Either the management module or the stacking module can be installed in this slot.
		1 or 2	Specifies a slot number of a media converter module. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2 when the unit is viewed from the front.
		a or b	Specifies a slot letter of a power supply or fan module. In the AT-MCF2000 Chassis, the left slot is A and the right slot is B when the unit is viewed from the back.
	To view the ID and slot numbers of a chassis, refer to “SYSTEM SHOW CLUSTER” on page 99 or “SYSTEM SHOW CHASSIS” on page 96.		
name	Assigns a name of up to 20 alphanumeric characters to the module. Spaces are permitted, but a name with spaces must be enclosed in double quotes (“ “). To remove the current value without specifying a new value, enter “none”. To view the current name of a module, refer to “SYSTEM		

SHOW INTERFACE" on page 101, "SYSTEM SHOW CHASSIS" on page 96 or "SYSTEM SHOW CLUSTER" on page 99.

temperature-threshold

Specifies a temperature threshold for the module. The range is 0° C to 75° C (32° F to 167° F). The default value is 60° C. The management module logs an event in the event log if a module's temperature exceeds the threshold or if, after exceeding it, falls below it. Different modules in the same chassis can have different temperature thresholds. To view a module's current temperature threshold value, refer to "SYSTEM SHOW MODULE" on page 108.

Privilege Levels

Administrator and read-write.

Description

This command assigns a name and temperature threshold to a module. Assigning a name to a module can make it easier for you to identify it. Only the management and media converter modules support names. All modules, including the power supply and fan modules, support temperature thresholds. To view module names, refer to "SYSTEM SHOW INTERFACE" on page 101, "SYSTEM SHOW CHASSIS" on page 96 or "SYSTEM SHOW CLUSTER" on page 99.

The operating temperature of the modules in a chassis can be monitored with the temperature threshold parameter. The management module logs an event in the event log if a module's temperature exceeds or falls below the threshold. All of the modules, with the exception of the AT-MCF2000S Stacking Module, support a temperature threshold. To view a module's current temperature threshold value, refer to "SYSTEM SHOW MODULE" on page 108.

The operating temperatures of the modules in a chassis can vary widely depending on their proximity to the cooling fans and the area on the module where the temperature is measured. This should be taken into consideration when setting a temperature threshold for a module. For the power supply and fan modules, the temperature is measured where the outside air enters the cooling vents on the module. Consequently, these modules tend to measure the ambient temperature of the room or wiring closet where the chassis is installed. In contrast, the temperatures for the management and media converter modules are measured on the circuit board away from the cooling vents, and so typically reflect the internal temperature of the chassis.

Examples

This command assigns the name “mm vata” to a management module in a chassis with the chassis ID of 0:

```
system set module id=0/m name="mm vata"
```

This command sets the temperature threshold to 55° C for a media converter module in slot 2 in a chassis with an ID of 0:

```
system set module id=0/2 temperature-threshold=55
```

This command assigns the name “124 mod-ab” and a temperature threshold of 70° C to the media converter module in slot 1 of a chassis with an ID of 0:

```
system set module id=0/1 name="124 mod-ab"
temperature-threshold=70
```

This command assigns a temperature threshold of 70° C to the power supply module or fan module in slot A. The chassis has an ID of 0:

```
system set module id=0/a temperature-threshold=70
```

SYSTEM SET PORT

Syntax

```
system set port id=c/m|b/[pp]/[port]
port-state=disable|enable auto-neg=disable|enable
speed=10|100|1000 duplex=half|full
crossover=mdi|mdix
ingress-rate-limit=none|128k|256k|512k|1m|2M|4M|8M
egress-rate-limit=none|128k|256k|512k|1m|2M|4M|8M
```

Parameters

id	Specifies a twisted pair or fiber optic port on a media converter module. You can configure one port at a time, all the ports of the same type (that is, twisted pair or fiber optic ports), one port pair, and all of the ports on a module. The ID consists of the following parts:
c	Identifies the ID number of the chassis. The chassis ID number depends on which module is installed in the management slot of the chassis. When a management module is installed in this slot, the chassis ID number is 0 or 31. When a stacking module is installed in this slot, the chassis ID can be from 1 to 30.
m	Specifies the 10/100/100Base-T port on the management module.
b	Specifies a slot number of a media converter slot. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.
pp	Specifies the number of the channel on the AT-MCF2012LC and AT-MCF2012LC/1 Modules with the port to be configured. To configure all the ports of the same type, either twisted pair or fiber optic ports, omit this parameter. Possible values are:
1 to 12	Specifies a channel. Channel 1 consists of twisted pair port 1 and fiber topic port 1, channel 2 of twisted pair port 2 and fiber topic port 2, and so on. You can specify only one channel.

port	Specifies the letter of a port in a channel on a media converter module. Possible values are:

a	Specifies a twisted pair port. If you specify only a port and not a channel, then all of the twisted pair ports are specified.
b	Specifies a fiber optic port. If you specify only a port and not a channel, then all of the fiber ports are specified.

To view the ID and slot numbers of a chassis, refer to “SYSTEM SHOW CLUSTER” on page 99 or “SYSTEM SHOW CHASSIS” on page 96. To view the ports of a channel, refer to “SYSTEM SHOW INTERFACE” on page 101.

port-state	Enables and disables the port. Available settings are:

enable	Activates the transmitter and receiver on the port. This is the default setting.
disable	Deactivates the transmitter and receiver on the port.

auto-neg	Activates and deactivates IEEE 802.3u Auto-Negotiation and auto-MDI/MDIX on a port. When Auto-Negotiation is activated, the port’s speed, duplex mode, and wiring configuration are set automatically. Available settings are:

enable	Activates IEEE 802.3u Auto-Negotiation and auto-MDI/MDIX on the port. This is the default setting for a twisted pair port. This is also the default setting for fiber optic ports that support Auto-Negotiation, such as 100Base-SX ports. This setting is not appropriate for fiber optic ports that do not support Auto-Negotiation, such as 100Base-FX and 1000Base-F.
disable	Deactivates IEEE 802.3u Auto-Negotiation and auto-MDI/MDIX on the port.

speed	Sets the speed of a twisted pair port. Available settings are:

10	Sets the speed of the port to 10 Mbps.
100	Sets the speed of the port to 100 Mbps.

	1000	Sets the speed of the port to 1000 Mbps. This setting is applicable to the 10/100/1000Base-T port on the management module. This setting is not supported on the twisted pair and fiber optic ports on the AT-MCF2012LC and AT-MCF2012LC/1 Media Converter Modules.
duplex		Sets the duplex mode of a port. Available settings are:
	full	Sets the duplex mode of the port to full-duplex. This is the default setting for a fiber optic port that does not support Auto-Negotiation.
	half	Sets the duplex mode of the port to half-duplex.
crossover		Sets the wiring configuration of a twisted pair port. Auto-Negotiation must be disabled on the port to set this parameter. Available settings are:
	mdi	Sets the wiring configuration to MDI.
	mdix	Sets the wiring configuration to MDI-X.
ingress-rate-limit		Defines the maximum number of bits per second a port accepts from the network device connected to it.
egress-rate-limit		Defines the maximum number of bits per second a port will transmit to the network device connected to it.

Privilege Levels

Administrator and read-write.

Description

This command configures the following parameter settings on a port in a media converter channel:

- Port status
- Auto-Negotiation
- Speed and duplex mode
- MDI/MDI-X wiring configuration
- Ingress and egress filtering

This command can also set the operating parameters of the 10/100/1000Base-T Management port on the management module. To view the current settings of a port, refer to “SYSTEM SHOW INTERFACE” on page 101.

Note
You should refer to the media converter module’s documentation for operating specifications before configuring the port parameters. This is to avoid the possibility of applying an inappropriate setting to a port. For example, the twisted pair ports on the AT-MCF2012LC media converter module support speeds of 10 and 100 Mbps, but not 1000 Mbps.

The PORT-STATE parameter enables and disables a port. A disabled port does not forward ingress or egress packet traffic. You might disable a port to secure it from unauthorized use or when troubleshooting a network problem. The default setting for a port is enabled.

The AUTO-NEG parameter enables and disables IEEE 802.3u Auto-Negotiation and auto-MDI/MDIX on a twisted pair port in a media converter channel. (Auto-Negotiation is not applicable to the fiber optic ports on the AT-MCF2012LC and AT-MCF2012LC/1 Media Converter Modules.) When Auto-Negotiation is enabled, the speed, duplex mode, and MDI/MDIX settings of a port are set automatically. When Auto-Negotiation is disabled, the port’s operating parameters can be set manually.

Auto-Negotiation should only be used on a twisted pair port when the device connected to the port is also using Auto-Negotiation. Otherwise, a duplex mode mismatch may occur, resulting in reduced network performance. A port using Auto-Negotiation defaults to half-duplex if it detects that the port on the other network device is not using Auto-Negotiation. The result would be a duplex mode mismatch if the port on the other network device is operating at a fixed duplex mode of full-duplex.

To avoid this issue, you should disable Auto-Negotiation on a media converter port and set the speed and duplex mode manually when the network device connected to the port can only operate in full-duplex mode. Alternatively, you can reconfigure the port on the network device to Auto-Negotiation or, if it does not support that feature, to half-duplex mode.

The SPEED, DUPLEX, and CROSSOVER parameters are used to set the speed, duplex mode, and MDI/MDIX settings, respectively, on a twisted pair port when Auto-Negotiation is disabled.

The DUPLEX parameter can also be used to set the duplex mode on a fiber optic port in a media converter channel.

For best network performance, all the elements of a media converter channel, meaning the two ports of a channel and the two network devices connected to the ports, should be using the same duplex mode. A media converter channel may have to discard packets if its two ports are operating in different modes, one half-duplex and the other full-duplex. This could result in a decrease of network performance if the network devices have to frequently retransmit packets.

For example, if the network device connected to the twisted pair port of a media converter channel is only capable of half-duplex mode, then both ports of the channel and the network device connected to the fiber optic port in the channel should be configured to operate in half-duplex mode as well.

Also featured on the twisted pair ports of a media converter module is auto-MDI/MDI-X, which automatically adjusts the wiring configuration of a twisted pair port to either MDI or MDI-X, depending on the wiring configuration of the end node. This feature allows the use of a straight-through twisted pair cable regardless of the wiring configuration of the port on the network device.

The auto-MDI/MDI-X feature is only available when a twisted pair port is using Auto-Negotiation, the default setting. Disabling Auto-Negotiation and manually configuring a port's speed and duplex mode also disables this feature. The wiring configuration of a port defaults to the MDI-X setting. Disabling Auto-Negotiation may require the manual configuration of the MDI/MDI-X setting on a port or the use a crossover cable, depending on the wiring configuration of the network device connected to the port on the module.

The INGRESS-RATE-LIMIT and EGRESS-RATE-LIMIT parameters control the flow of network traffic to and from a port in a channel to its network device. The rate limits, which are in kilobits and megabits per second, can be applied separately to the two ports of a channel. The rate limits can be used for storm prevention and to protect against the formation of bottlenecks in a network topology,

The INGRESS-RATE-LIMIT feature controls the number of bits per second a port accepts from the device connected to it. The port discards frames after the limit is exceeded. For example, an ingress rate limit of 128k limits a port to no more than 128 kilobits per second in traffic flow from its network device.

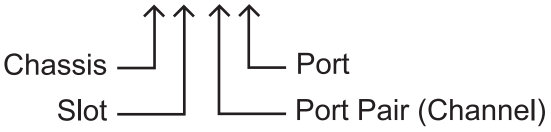
The EGRESS-RATE-LIMIT controls the number of bits per second a port transmits to the network device connected to it.

The INGRESS-RATE-LIMIT and EGRESS-RATE-LIMIT parameters are not supported on the 10/100/100Base-T Management port on the management module.

Examples

This command disables Auto-Negotiation of the twisted pair port in channel 5 of a media converter module and sets the port's speed and duplex mode to 100 Mbps, half-duplex. The module is in slot 2 of a chassis with an ID number of 1. Call-outs in the example identify the parts of the ID number:

```
system set port id=0/2/5/a auto-neg=disable speed=100 duplex=half
```



This command enables twisted port 5. The module is in slot 1 of a chassis with an ID number of 3:

```
system set port id=3/1/5/a port-state=enable
```

This command disables Auto-Negotiation of the twisted pair port in channel 2 of a media converter module and sets the port's speed and duplex mode to 10 Mbps, full-duplex, and the MDI/MDI-X setting to MDI. The module is in slot 1 of a chassis with an ID number of 1:

```
system set port id=1/1/2/a auto-neg=disable speed=10
duplex=full crossover=mdi
```

This command activates Auto-Negotiation on the twisted pair port in channel 4. The module is in slot 1 of a chassis with an ID of 2:

```
system set port id=2/1/4/a auto-neg=enable
```

This command sets the duplex mode to half-duplex for the fiber optic port in channel 11 on a module in slot 2 of a chassis with an ID of 2:

```
system set port id=2/2/11/b duplex=half
```

This command disables the fiber optic port in channel 6 of the module in slot 1. The chassis has the ID number 3:

```
system set port id=3/1/6/b port-state=disable
```

The previous examples illustrate how to configure a single port on a media converter module. By omitting the PORT PAIR parameter, you can configure all of the ports of the same type (that is, twisted pair or fiber optic ports) with just one command. This is illustrated in the following two examples.

This command disables all the twisted pair ports in the media converter module in slot 1. The chassis has the ID number of 1:

```
system set port id=1/1/a port-state=disable
```

This command sets the duplex mode to half-duplex for all the fiber optic ports in the media converter module in slot 2. The chassis has the ID number of 1:

```
system set port id=1/2/b duplex=half
```

The SYSTEM SET PORT command can also be used to configure the 10/100/1000Base-T Management port on the management module. This example disables Auto-Negotiation on the port and sets it to 100 Mbps, full-duplex. The chassis has the ID number of 0:

```
system set port id=0/m auto-neg=disable speed=100
duplex=full
```

SYSTEM SHOW CHASSIS

Syntax

```
system show chassis id=chassis
```

Parameters

chassis	Identifies the ID number of the chassis. The chassis ID number depends on which module is installed in the management slot of the chassis. When a management module is installed in this slot, the chassis ID number is either 0 or 31. When a stacking module is installed in this slot, the range of the chassis ID is from 1 to 30. To view the ID number of a unit, use the SYSTEM SHOW CLUSTER command. For instructions, refer to “SYSTEM SHOW CLUSTER” on page 99.

Privilege Levels

Administrator, read-write and read-only.

Description

This command displays the model names and slot assignments of the management and media converter modules in a chassis, as well as the chassis’ module name and MAC address. This command does not display the power supply or fan modules.

This command can display just one chassis at a time. To view all of the chassis of a stack with one command, use the SYSTEM SHOW CLUSTER command, as explained in “SYSTEM SHOW CLUSTER” on page 99.

An example of the information is shown in Figure 11.

```
Chassis      Chassis       Chassis                 MAC     Master
   ID          Name          Type              Address    Chassis
-------------------------------------------------------------------
 0                     AT-MCF2000    11:22:33:44:55:55       Yes

  Slot ID    Module Name    Module Type  Cfg Overwrite  Software Version
  ----------------------------------------------------------------------
       M                    AT-MCF2000M                   v2.0.0
       1                    AT-MCF2012LC      Disable     v2.0.0
       2                    AT-MCF2012LC      Disable     v2.0.0
       A                    AT-MCF2KFAN       -           -
       B                    AT-MCF2000AC      -           -
```

Figure 11. SYSTEM SHOW CHASSIS Command

The columns are defined here:

- Chassis ID - The identification number of the chassis. For information, refer to "Setting Chassis ID Numbers" on page 18.
- Chassis Name - The name of the chassis, set with the SYSTEM SET CHASSIS command. For information, refer to "SYSTEM SET CHASSIS" on page 59.
- Chassis Type - The chassis' model name.
- MAC Address - The chassis' MAC address.
- Master Chassis - Whether the chassis is the master chassis of a stack. To be the master chassis of a stack, the status of the chassis' management module must be set to active. Possible status are:
  - Yes: The status of the management module in the chassis is active, making it the master chassis of the stack.
  - No: The chassis has a stacking module.
- Slot ID: A slot in the chassis. Possible values are:
  - M: The management slot, used for the AT-MCF2000M Management Module and the AT-MCF2000S Stacking Module.
  - *number*: A media converter slot number (for example, 1, 2, etc.). An empty slot is not included in the table.
- Module Name: The name of the module, set with the"SYSTEM SET MODULE" on page 86.
- Module Type - The module's model name.
- Software Version - The version number of the module's AT-S85 or AT-S97 Management Software.

Example

The following command displays information about a chassis with an ID number of 0:

```
system show chassis id=0
```

SYSTEM SHOW CLUSTER

Syntax

```
system show cluster
```

Parameters

None.

Privilege Levels

Administrator, read-write and read-only.

Description

This command displays the model names and slot assignments of the management and media converter modules in a chassis or stack, as well as the chassis' module name and MAC address. This command does not display stacking, power supply, or fan modules.

This command is similar to the SYSTEM SHOW CHASSIS command in that both commands display the same information about a chassis. Where they differ is that the SYSTEM SHOW COMMAND can display only one chassis at a time and requires a chassis ID number. In contrast, this command displays all of the chassis of a stack and does not require an ID number.

The SYSTEM SHOW CLUSTER command is typically used to view the basic information above on a single chassis that is not part of a stack or for all of the chassis of a stack. The SYSTEM SHOW CHASSIS command is intended for situations where there is a stack and, rather than viewing all of the devices, you want to focus on just one of the units.

Figure 12 on page 100 illustrates this command on a stack of three chassis. For an explanation of the information, refer to "SYSTEM SHOW CHASSIS" on page 96.

```
Chassis        Chassis     Chassis                 MAC     Master
 ID               Name        Type             Address    Chassis
-----------------------------------------------------------------
 0         AQ Traffic  AT-MCF2000    11:22:33:44:55:55      Yes

                                AT-MCF2000
     Slot ID     Module Name    Module Type   Cfg Overwrite Software Version
     ----------------------------------------------------------------------
     M                         AT-MCF2000M                     v2.0.0
     1           Reg 1 traf    AT-MCF2012LC   Enable           v2.0.0
     2           Reg 2 traf    AT-MCF2012LC/1 Enable           v2.0.0

 1         ACT Traffic               11:22:33:44:22:22      No

                                AT-MCF2000
     Slot ID     Module Name    Module Type    Cfg Overwrite Software Version
     ----------------------------------------------------------------------
     1           Reg 7 traf    AT-MCF2012LC   Disable          v2.0.0
     2           Reg 12 traf   AT-MCF2012LC   Disable          v2.0.0

 2         UJ Traffic                11:22:33:44:66:77      No

                                AT-MCF2000
     Slot ID     Module Name    Module Type   Cfg Overwrite Software Version
     ----------------------------------------------------------------------
     1           District 1    AT-MCF2012LC   Enable           v2.0.0
     2           District 2    AT-MCF2012LC   Enable           v2.0.0
```

Figure 12. SYSTEM SHOW CLUSTER Command

Example

This command displays the slot ID, module name, module type, configuration overwrite status, and the software version:

```
system show cluster
```

SYSTEM SHOW INTERFACE

Syntax - Chassis Only

```
system show interface id=chassis
```

Syntax - Chassis and Slot

```
system show interface id=chassis/slot
```

Syntax - Chassis, Slot and Channel

```
system show interface id=chassis/slot/channel
```

Parameters

id	Specifies the chassis, slot or channel to display. The command can display only one device at a time. The ID consists of the following parts:

chassis	Identifies the ID number of the chassis. The chassis ID number depends on which module is installed in the management slot of the chassis. When a management module is installed in this slot, the chassis ID number is either 0 or 31. When a stacking module is installed in this slot, the range of the chassis ID is from 1 to 30.
slot	Specifies the slot number of the media converter module with the port. Possible values are:

1 or 2	Specifies a slot number of a media converter slot. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.

channel	Specifies the number of a channel on the AT-MCF2012LC and AT-MCF2012LC/1 Modules. You can specify only one channel at a time. Possible values are:

1 to 12	Specifies a channel. Channel 1 consists of twisted pair port 1 and fiber topic port 1, channel 2 of twisted pair port 2 and fiber topic port 2, and so on.

To view the ID and slot numbers of a chassis, refer to "SYSTEM SHOW CLUSTER" on page 99 or "SYSTEM SHOW CHASSIS" on page 96.

Privilege Levels

Administrator, read-write, and read-only.

General Description

This command can display a variety of status information about a media converter chassis and the media converter modules. You can limit the information to just the model names of the media converter modules in a chassis or view more detailed information about the devices, such as the current operating parameters of the two ports of a media converter channel.

> **Note**
> To view the parameter settings of the 10/100/1000Base-T port on the AT-MCF2000M Management Module, use the SYSTEM SHOW MODULE command. For information, refer to “SYSTEM SHOW MODULE” on page 108.)

Description of the Chassis Only Command

Specifying just a chassis ID number in the command displays the names of the media converter models in a chassis and their respective slot numbers. This is useful in determining the types of media converter modules in a chassis. An example of the information is shown in Figure 13.

```
Interface 0 Information:
Chassis ID    Slot ID    Module Name    Module Type
---------------------------------------------------
   1             1       Traffic 12     AT-MCF2012LC
   1             2       Traffic 7      AT-MCF2012LC
```

Figure 13. SYSTEM SHOW INTERFACE Command - Chassis ID Only

The table does not include empty media converter slots. The columns in the table are defined here:

- Chassis ID - The chassis ID number.
- Slot ID - The slot numbers of the media converter modules in the chassis. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.
- Module Name - The module’s name. To assign a name, refer to “SYSTEM SET MODULE” on page 86.
- Module Type - The module’s model name.

Description of the Chassis and Slot Command

To view the current status of the channel ports on a media converter module, including the status of the links between the channel ports and the network devices, specify in the command both a chassis ID number and the slot number of the module. Figure 14 is an example.

```
Interface 0/2 Information:
Chassis ID .......... 1
Slot ID ............. 2
Module Name ......... User Module
Module Type ......... AT-MCF2012LC
Port ID    Port Name     Copper        Fiber        OpMode
--------------------------------------------------------------
1          User Port     Online/100    Online/100   Link Test
2          User Port     Online/100    Online/100   Link Test
3          User Port     Online/100    Online/100   Link Test
4          User Port     Online/100    Online/100   Link Test
5          User Port     Online/100    Online/100   Link Test
```

Figure 14. Chassis ID and Slot ID

The information in the table is arranged according to the media converter channels in a module. The "Port ID" column lists the channels and the "Port Name" column lists the channel names. Neither can be changed. For example, "Port ID 1" refers to channel 1 which, on the AT-MCF2012LC and AT-MCF2012LC/1 Modules, consists of twisted pair port 1 and fiber optic port 1, "Port ID 2" refers to channel 2 with twisted pair port 2 and fiber optic port 1, and so on.

The columns in the table are defined here:

- Port ID - The channel numbers.
- Port Name - The channel names.
- Copper - The current status of the twisted pair ports of the channels.
- Fiber - The current status of the fiber ports of the channels.
- OpMode - The current operating modes of the channels. For information, refer to "SYSTEM SET INTERFACE" on page 79.

The meaning of the states of the two ports in a channel can differ depending on a channel's operating mode of Link Test, MissingLink, or Smart MissingLink. The easiest way to decipher the states is to consider a channel's two ports as a unit.

Table 4 lists the possible combinations of port states when a channel is in the Link Test mode.

Table 4. Port Status in the Link Test Mode

Channel Port	Status	Description
Copper	Offline	Neither port in the channel has established a link with a network device.
Fiber	Offline	
Copper	Online	Both ports in the channel have established a link with a network device.
Fiber	Online	
Copper	Online	The twisted pair port in the channel has established a link with a network device, but the fiber optic port has not established a link.
Fiber	Offline	
Copper	Offline	The fiber optic port of the channel has established a link with a network device, but the twisted pair port has not established a link.
Fiber	Online	

Table 5 lists the possible combinations of the port states for a channel in the Missing Link mode.

Table 5. Port Status in the Missing Link Mode

Channel Port	Status	Description
Copper	Offline	One or both ports in the channel cannot establish a link with a network device.
Fiber	Offline	
Copper	Online	Both ports in the channel have established a link with a network device.
Fiber	Online	

The states for the ports of a channel in the Smart MissingLink mode are explained in Table 6.

Table 6. Port Status in the Smart Missing Link Mode

Channel Port	Status	Description
Copper	Offline	Neither port in the channel has established a link with a network device.
Fiber	Offline	

Table 6. Port Status in the Smart Missing Link Mode (Continued)

Channel Port	Status	Description
Copper	Online	Both ports in the channel have established a link with a network device.
Fiber	Online	
Copper	TX SML	The twisted pair port of the channel can establish a link with its network device, but the fiber optic port is unable to establish a link with its remote device.
Fiber	Offline	
Copper	Offline	The fiber optic port of a channel can establish a link with its network device, but the twisted pair port is unable to establish a link with its local device.
Fiber	TX SML	
Twisted Pair Port	TX or RX SML	Both ports in the channel can establish a link to a network device, but one of the ports is connected to another media converter that also supports the Smart MissingLink feature, forming a chain of converters. A link has been lost on one of the ports in the chain, causing a ripple affect through the chain of converters.
Fiber Optic Port	TX or RX SML	

Description of the Chassis, Slot, and Channel Command

To view the operating parameters of the channel's two ports, including the speeds and duplex modes, specify a channel number in the command. You can view only one channel at a time. Figure 15 is an example of the information.

```
Interface 0/2/7 Information
Chassis ID .............. 0
Slot ID ................. 2
Module Name ............. User Module
Module Type ............. AT-MCF2012LC
Port Name ............... User Port
OpMode .................. Link Test
Port Copper Link
     Port State .......... Enabled
     Link Status ......... Online
     Auto Negotiation .... Enabled
     Speed ............... 100 Mbps
     Duplex .............. Full
     MDI Crossover ....... MDI
     Ingress Rate Limit .. No Limit
     Egress Rate Limit ... No Limit
Port Fiber Link ....
     Port State .......... Enabled
     Link Status ......... Online
     Speed ............... 100 Mbps
     Duplex .............. Full
     Ingress Rate Limit .. No Limit
     Egress Rate Limit ... No Limit
```

Figure 15. SYSTEM SHOW INTERFACE Command - Chassis ID, Slot ID, and Channel

The fields are defined here:

- Interface Information - The location of the channel. The information is given as chassis number, slot number, and channel number.
- Chassis ID - The ID number of the chassis.
- Slot ID - The slot number in the chassis with the media converter module. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.
- Module Name - The name of the module. To assign a name, refer to “SYSTEM SET MODULE” on page 86.
- Module Type - The module’s model name.
- Port Name - The channel’s name. The default is “User Port.” This parameter cannot be changed.
- OpMode - The operating mode of the channel, which can be MissingLink, Smart MissingLink, or Link Test. For a description of the operating modes, refer to “SYSTEM SET INTERFACE” on page 79.

- ❐ Port State - The state of the port:

  Enabled - The port is enabled.

  Disabled - The port was disabled with SYSTEM SET PORT command. For information, refer to "SYSTEM SET PORT" on page 89.

- ❐ Link Status - The status of the link of a port to its network device. For definitions, refer to Table 4, "Port Status in the Link Test Mode" on page 104, Table 5, "Port Status in the Missing Link Mode" on page 104, or Table 6, "Port Status in the Smart Missing Link Mode" on page 104.
- ❐ Auto Negotiation - A status of Enabled is an indication that the twisted pair port's speed, duplex mode, and MDI/MDI-X wiring configuration are set automatically with Auto-Negotiation and the auto-MDI/MDI-X feature. A status of Disabled means the port's speed, duplex mode, and MDI/MDI-X wiring configuration were set manually.
- ❐ Speed - The speed of the port when the parameter is set manually. This parameter does not reflect the actual current speed when a port is using Auto-Negotiation.
- ❐ Duplex - The duplex mode of the port when the parameter is set manually. This parameter does not reflect the actual current duplex mode when a port is using Auto-Negotiation.
- ❐ MDI Crossover - The wiring configuration of the twisted pair port.
- ❐ Ingress and Egress Rate Limits - The settings for the packet filtering feature. For information, refer to "SYSTEM SET PORT" on page 89.

To configure the channels and ports of a media converter module, refer to "SYSTEM SET INTERFACE" on page 79 and "SYSTEM SET PORT" on page 89.

Examples

This command displays a list of the media converter modules in a chassis with an ID number of 0:

```
system show interface id=0
```

This command displays the status of all the channel ports on a media converter module in slot 2 of a chassis with an ID number of 1:

```
system show interface id=1/2
```

This command displays the parameter settings for the two ports of channel 11 of a media converter module in slot 1 of a chassis with ID number of 1:

```
system show interface id=1/1/11
```

SYSTEM SHOW MODULE

Syntax

```
system show module id=chassis/slot
```

Parameters

id — Identifies a module. You can specify only one module at a time. The ID number consists of the following parts:

- chassis — Identifies the ID number of the chassis. The chassis ID number depends on which module is installed in the management slot of the chassis. When a management module is installed in this slot, the chassis ID number is 0 or 31. When a stacking module is installed in this slot, the chassis ID can be from 1 to 30.
- slot — Specifies the ID number or letter of the slot with the module. Possible values are:
  - m — Specifies the management module slot. This slot is used for the management module or the stacking module.
  - a or b — Specifies a slot letter of a power supply or fan module. In the AT-MCF2000 Chassis, the left slot is A and the right slot is B when the unit is viewed from the back.
  - 1 or 2 — Specifies a slot number of a media converter module. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2 when the unit is viewed from the front.

To view the ID and slot numbers of a chassis, refer to “SYSTEM SHOW CLUSTER” on page 99 or “SYSTEM SHOW CHASSIS” on page 96.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays status information about the media converter, power supply, fan, and management modules in a chassis. The information varies depending on the module. Figure 16 is an example of the information for the AT-MCF2000AC Power Supply Module or the AT-MCF2KFAN Fan Module.

```
RPSA Information:
     Module Name ................
     Module Type ................ AT-MCF2000AC
     Power OK ................... Yes
     Module Present ............. Present
     3.3V ....................... Good = 3.415V
     12.0V ...................... Good = 12.125V
     Temperature ................ 25.821 C
     Temperature Threshold ...... 60 C
     Fan A Speed ................ 7105 RPM
     Fan B Speed ................ 7033 RPM
```

Figure 16. SYSTEM SHOW MODULE Command for a Power Supply or Fan Module

The acronym “RPS” for “Redundant Power Supply” in the top line should be ignored. It is a misnomer for a fan module as well as for a power supply module in a chassis with one power supply. The letter following “RPS” is the chassis slot location of the power supply or fan module.

Figure 17 illustrates the information for the management Module.

```
CPU Information:
     Name .......................
     Module Type ................ AT-MCF2000M
     Module Status .............. Active
     Module Present ............. Present
     1.2V ....................... Good = 1.212V
     1.8V ....................... Good = 1.818V
     2.5V ....................... Good = 2.535
     3.3V ....................... Good = 3.336V
     12.0V ...................... Good = 12.187
     Temperature ................ 29.2500 C
     Temperature Threshold ...... 60 C
     Management Port:
           Link State ........... Up
           Auto Negotiation...... Enabled
           Speed ................ 100 Mbps
           Duplex ............... Full
           MDI Crossover ........ MDI
     Stacking Port:
           Link State .......... Up
```

Figure 17. SYSTEM SHOW MODULE Command for the Management Module

The information for the AT-MCF2012LC and AT-MCF2012LC/1 Media Converter Modules is shown in Figure 18.

```
CPU Information:
     Name .......................
     Module Type ................ AT-MCF2012LC
     Module Status .............. Active
     Module Present ............. Present
     1.2V ....................... Good = 1.198
     1.8V ....................... Good = 1.804V
     2.5V ....................... Good = 2.509
     3.3V ....................... Good = 3.302V
     12.0V ...................... Good = 12.6224
     Temperature ................ 38.15V
     Temperature Threshold ...... 60 C
```

Figure 18. SYSTEM SHOW MODULE Command for a Media Converter Module

The fields are defined here:

- Module Name - The name of the module. Refer to “SYSTEM SET MODULE” on page 86 for instructions on assigning a name to a module.

- Module Type - The model name.
- Power OK - A status of Yes signifies the input power is within the module's operating range. A status of No signals that the input power is less or greater than the permitted range. This parameter only applies to the power supply and fan modules.
- Voltages - Operating voltages. These are output voltages for the AT-MCF2000AC Power Supply Module and input voltages for all other modules.
- Temperature - The current temperature of the module. On the AT-MCF2000AC Power Supply Module and the AT-MCF2KFAN Fan Module, the temperature is measured at the point where the outside air enters the chassis from the cooling vents. The temperature for all other modules is measured on the circuit board.
- Temperature Threshold - The temperature threshold of a module. The management module logs an event in the event log if the threshold is exceeded, to warn of possible excessive temperature in the wiring closet or chassis. Refer to "SYSTEM SET MODULE" on page 86 for instructions on setting a module's temperature threshold.
- Management Port - The status of the link of the 10/100/1000Base-T Management port on the AT-MCF2000M Management Module and, if the port has a link to a network device, the current settings. Refer to "SYSTEM SET PORT" on page 89 for instructions on setting this port.
- Stacking Port - The status of the Stack port connection on the AT-MCF2000M Management Module. A status of Up indicates the port has established a link with a Stack port in another chassis.

Examples

This command displays information about the AT-MCF2000M Management Module in a chassis with an ID number of 0:

```
system show module id=0/m
```

This command displays information about the media converter module in slot 2 in a chassis with an ID number of 0:

```
system show module id=0/2
```

Chapter 7

Network Time Protocol Commands

This chapter describes how to set the internal clock and calender from an NTP server on your network or the Internet. This chapter contains the following sections:

Note
Remember to save your parameters changes in the active master configuration file with the CONFIG SAVE command. For information, refer to "Saving Your Configuration Changes" on page 17 or Chapter 9, "Configuration File Commands" on page 141.

Overview

The AT-S97 Management Software comes with a Network Time Protocol (NTP) client for setting its internal clock and calender from an NTP server on your network or the Internet. The date and time are added to the events stored in the event log and to SNMP traps.

The commands described in this chapter control the NTP client. The client is activated and deactivated with the NTP ENABLE command and NTP DISABLE commands, and the IP address of the NTP server is specified with the NTP SET command.

To manually set the date and time, refer to “SYSTEM SET CLOCK” on page 60.

NTP Client Guidelines

The guidelines to using the NTP client are:

- ☐ The AT-MCF2000M Management Module must have an IP configuration, as explained in Chapter 4, “IP Configuration Commands” on page 47.
- ☐ The 10/100/1000Base-T Management port on the management module must be connected to a device on your network, such as a Fast Ethernet or Gigabit Ethernet switch. The module communicates with the NTP server through this port.
- ☐ The NTP server must be a member of the same network as the management module or have access to it through Layer 3 routing devices.
- ☐ If the management module and the NTP server are on different networks, the IP configuration on the module must include a default gateway address specifying the IP address of the routing interface of the first hop to reaching the remote server. For instructions, refer to Chapter 4, “IP Configuration Commands” on page 47.
- ☐ Before you enable the NTP server with the NTP ENABLE command, connect the chassis to an NTP server.

Command Summary

Table 7 summarizes the NTP client commands.

Table 7. NTP Client Commands

Command	Description
NTP DISABLE on page 116	Deactivates the NTP client.
NTP ENABLE on page 117	Activates the NTP client.

Table 7. NTP Client Commands (Continued)

Command	Description
NTP SET on page 118	Specifies the IP address of the NTP server on the network or the Internet.
NTP SHOW on page 119	Displays the current settings of the NTP client.

NTP DISABLE

Syntax

```
ntp disable
```

Parameters

None.

Privilege Levels

Administrator and read-write.

Description

This command deactivates the NTP client on the management module. This is the client’s default setting.

Example

The following command disables NTP:

```
ntp disable
```

NTP ENABLE

Syntax

```
ntp enable
```

Parameters

None.

Privilege Levels

Administrator and read-write.

Description

This command activates the NTP client on the management module. The client polls for the NTP server, making fifteen attempts over twenty seconds to contact the device. The default setting for the client is disabled.

To set the IP address of the NTP server, use "NTP SET" on page 118.

Note
Review "NTP Client Guidelines" on page 114 before activating the client.

Caution
If you enable the NTP client before you connect an NTP server to the AT-MCF2000 chassis, the system appears to hang.

Example

The following command enables NTP:

```
ntp enable
```

NTP SET

Syntax

```
ntp set server=ipaddress utcoffset=integer
```

Parameters

server	Specifies the IP address of an NTP server.
utcoffset	Specifies the time difference, in hours, between Universal Time Coordinated (UTC) and local time. The range is between -12 and +12 hours. The default is 0 hours.

Privilege Levels

Administrator and read-write.

Description

This command specifies the IP address of the NTP server on your network or the Internet. In addition, this command permits you to adjust the local time of the media converter according to your local time zone.

Examples

This command specifies the IP address 149.122.55.77 as the NTP server:

```
ntp set server=149.122.55.77
```

This command specifies the IP address 149.122.55.79 as the NTP server with a UTC offset of 3 hours:

```
ntp set server=149.122.55.79 utcoffset=3
```

This command specifies the IP address 149.122.55.81 as the NTP server with a UTC offset of -6 hours:

```
ntp set server=149.122.55.81 utcoffset=-6
```

NTP SHOW

Syntax

```
ntp show
```

Parameters

None.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays the status of the NTP client on the management module and the IP address of the NTP server, as shown in Figure 19.

```
NTP Information:
    Status ............. Disable
    Server ............. 0.0.0.0
```

Figure 19. NTP SHOW Command

Example

This following command displays NTP client status and the IP address of the NTP server:

```
ntp show
```

Chapter 8

Event Log and Syslog Client Commands

This chapter describes how to log events with the event log and syslog client commands. This chapter contains the following sections:

Note
Remember to save your parameters changes in the active master configuration file with the CONFIG SAVE command. For information, refer to “Saving Your Configuration Changes” on page 17 or Chapter 9, “Configuration File Commands” on page 141.

Overview

The management, media converter, power supply, and fan modules generate event messages with vital information about system activity. If a network problem occurs, the messages can help you determine the sequence of events that led to the problem as well as identify and resolve it. An event message contains the following information:

- ❒ The time and date of the event
- ❒ The severity level of the event
- ❒ A description of the event

The events are stored in the event log, an area of non-volatile memory separate from the file system where the messages are retained even when the chassis is powered off. The log’s maximum capacity is 1,024 events. When the log reaches maximum capacity, the module deletes the oldest events as it adds new events.

The event log is controlled and viewed with the LOGGING commands. The LOGGING ENABLE command activates the log, the default setting, and the LOGGING DISABLE command deactivates the log, stopping the log from storing any further event messages. The LOGGING SHOW command displays the status of the log and the events messages, and the LOGGING CLEAR command deletes all the events messages from the log.

The management module also has a syslog client for sending the event messages to a syslog server on your network. A server can act as the central storage device for the event messages from many different devices on your network. To use the syslog client, you must specify the IP address of the syslog server on the network with the LOGGING SET command and enable the client with the LOGGING ENABLE SYSLOG command. You can specify only one syslog server. Before using the syslog client, you should review the guidelines in the next section.

Syslog Client Guidelines

The guidelines to using the syslog client are:

- ❒ The AT-MCF2000M Management Module must have an IP configuration. For instructions, refer to Chapter 4, “IP Configuration Commands” on page 47.
- ❒ The 10/100/1000Base-T Management port on the management module must be connected to a network device on your network, such as a Fast Ethernet or Gigabit Ethernet switch. The management module communicates with the syslog server through this port.
- ❒ The syslog server must be a member of the same network as the management module or have access to it through Layer 3 routing devices.

- ❒ If the management module and syslog server are on different networks, the IP configuration on the management module must include a default gateway specifying the IP address of the first hop to reaching the server. For instructions, refer to Chapter 4, “IP Configuration Commands” on page 47.

Command Summary

Table 8 summarizes the event log and syslog client commands.

Table 8. Event Log and Syslog Client Commands

Command	Description
LOGGING CLEAR EVENTLOG on page 124	Clears all the events from the log.
LOGGING DISABLE EVENTLOG on page 125	Disables the event log. No further events are stored in the log.
LOGGING DISABLE SYSLOG on page 126	Disables the syslog client. No further events are sent to a syslog server.
LOGGING ENABLE EVENTLOG on page 127	Activates the event log which begins to store event messages.
LOGGING ENABLE SYSLOG on page 128	Activates the syslog client.
LOGGING SET EVENTLOG on page 129	Specifies the severity level of the event messages viewed in the log and sent to a syslog server.
LOGGING SET SYSLOG on page 131	Specifies the IP address of a syslog server and a facility code for the messages.
LOGGING SHOW on page 132	Displays the status of the event log and syslog client.
“LOGGING SHOW EVENTLOG” on page 134	Displays the event messages in the event log.

LOGGING CLEAR EVENTLOG

Syntax

```
logging clear eventlog
```

Parameters

None.

Privilege Level

Administrator

Description

This command deletes all the entries in the event log. If the log is activated, the management module immediately begins to store new events.

Example

The following command clears the event log:

```
logging clear eventlog
```

LOGGING DISABLE EVENTLOG

Syntax

```
logging disable eventlog
```

Parameters

None.

Privilege Levels

Administrator and read-write

Description

This command disables the event log. This stops the management module from storing any further events, but any events already stored in the log are retained. To display the current state of the event log or the event messages, refer to “LOGGING SHOW” on page 132. The default setting for the event log is enabled.

Example

The following command disables the event log:

```
logging disable eventlog
```

LOGGING DISABLE SYSLOG

Syntax

```
logging disable syslog
```

Parameters

None.

Privilege Levels

Administrator and read-write

Description

This command stops the management module from transmitting events to a syslog server by disabling the syslog client. This is the default state of the client. To display the current state of the syslog client, refer to "LOGGING SHOW" on page 132.

Example

The following command disables the syslog client:

```
logging disable syslog
```

LOGGING ENABLE EVENTLOG

Syntax

```
logging enable eventlog
```

Parameters

None.

Privilege Levels

Administrator and read-write

Description

This command activates the event log. The management module immediately begins to store the events as they are generated by the modules in the chassis. This is the log's default setting. To display the log's current state, refer to "LOGGING SHOW" on page 132.

Example

The following command enables the event log:

```
logging enable eventlog
```

LOGGING ENABLE SYSLOG

Syntax

```
logging enable syslog
```

Parameters

None.

Privilege Levels

Administrator and read-write

Description

This command activates the syslog client on the management module. The module immediately begins to send the event messages generated by the modules in the chassis to the syslog server. The default setting for the syslog client is disabled. The IP address of the syslog server is specified with “LOGGING SET EVENTLOG” on page 129. To display the current status of the syslog client, refer to “LOGGING SHOW” on page 132.

Note
For the requirements of the syslog client, refer to “Syslog Client Guidelines” on page 122,

Example

The following command enables the syslog client:

```
logging enable syslog
```

LOGGING SET EVENTLOG

Syntax

```
logging set eventlog severity-level=critical|major|minor|
event
```

Parameters

severity-level	Specifies the severity level of the event messages displayed in the event log and sent to a syslog server. The same level applies to both the event log and the syslog client. The levels from highest to lowest severity are:

critical	Critical events signal the loss of power to or the failure of a power module. Messages of this level can also reflect a physical change to the stacking feature, such as the removal of a stacking cable or the introduction of new chassis to a stack.
major	Major events announce a component failure to the a fan or media converter module. Resets of and powering on a module or chassis are also categorized as major events.
minor	Minor events encompass physical changes to a chassis, such as the installation or removal of a module. Connecting and disconnecting cables to the ports of the media converter channels are also listed as minor events.
event	Event messages typically signal a change in the status of a management component, such as the Telnet or SSH server. The start and end points of remote Telnet and Secure Shell management sessions and TFTP functions are also members of this category.

Selecting a level designates the messages of that level and all levels above it. For example, selecting the Critical level selects only Critical event messages, while selecting the Event level, the default setting, spans all levels and, therefore, all event messages.

Privilege Levels

Administrator and read-write.

Description

Event messages are categorized into four severity levels of Critical, Major, Minor, and Event. The severity levels are defined in the Parameters section of this command.

You can use this command to control which of the events in the log you want to view based on their severity levels, and so focus your efforts on particular messages. When you specify a severity level with this command, the LOGGING SHOW command displays the events of that severity level and all levels above it. For example, the default setting of the management module's severity level is Event. At this setting, the LOGGING SHOW command displays all of the messages in the event log, because the Event severity is the lowest level. But if you were to set the management module's severity level to Major, then you would only see the Critical and Major messages.

This command also controls the messages sent by the management module's syslog client to a syslog server. At the default value of Event, all messages are sent to a syslog server. But if you set the module's severity to Major, then only Critical and Major messages would be sent.

The management module can have only one severity level setting. The same setting applies to messages viewed in the event log and sent to a syslog server.

Examples

This command sets the severity level to critical:

```
logging set eventlog severity-level=critical
```

This command sets the severity level to major:

```
logging set eventlog severity-level=major
```

LOGGING SET SYSLOG

Syntax

```
logging set syslog [host=ipaddress] [facility-code=value]
```

Parameters

host	Specifies the IP address of a syslog server. To remove an IP address without assigning a new address, specify the default value of 0.0.0.0.
facility-code	Specifies a facility level for the event messages as they are sent to a syslog server. The range is 0 to 23. The default value is 1.

Privilege Levels

Administrator and read-write.

Description

This command specifies the IP address of a syslog server and a facility code for the events.

The HOST parameter specifies the IP address of a syslog server.

The FACILITY-CODE parameter adds a facility level to the events as they are sent to a syslog server. The facility level is a numerical code commonly used to group entries on the syslog server according to the source network device. You can specify only one facility level. Refer to RFC 3164 for the facility code definitions.

Examples

This command specifies the IP address of the syslog server as 149.22.22.44 and sets the facility code to 16 (local0):

```
logging set syslog host=149.22.22.44 facility-code=16
```

This command designates the IP address of the syslog server as 149.55.66.7:

```
logging set syslog host=149.55.66.7
```

This command sets the facility code for the messages to 21 (local5):

```
logging set syslog facility-code=21
```

LOGGING SHOW

Syntax

```
logging show
```

Parameters

None.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays the status of the event log and the syslog client, as shown in Figure 20.

```
EventLog Information
        Status .................. Enable
        Severity Level .......... Event

Syslog Information
        Status .................. Enable
        Server .................. 149.22.122.8
        Facility Code ........... 1
```

Figure 20. LOGGING SHOW Command

The fields in the EventLog Information section are:

- Status - The status of the event log. A status of Enable signifies the event log is storing event messages and a status of Disable indicates the event log is not storing messages. To set this value, refer to “LOGGING ENABLE EVENTLOG” on page 127 and “LOGGING DISABLE EVENTLOG” on page 125.
- Severity Level - The severity level of the messages displayed by the event log and sent to a syslog server. The severity levels from highest to lowest are Critical, Major, Minor, and Event. The affected messages are inclusive of the selected severity level and all levels above it. For example, the Event severity level, the default setting, encompasses all levels and so all event messages, while a setting of Major selects just the Critical and Major messages. To set this value, refer to “LOGGING SET EVENTLOG” on page 129.

The fields in the Syslog Information section are:

- Status - The status of the syslog client. When the status of the client is Enable, the management module can send events to a syslog server. When the status is Disable, the management module cannot send events to a syslog server. To set this parameter, refer to “LOGGING ENABLE SYSLOG” on page 128 and “LOGGING DISABLE SYSLOG” on page 126.
- Server - The IP address of the syslog server. To set this value, refer to “LOGGING SET EVENTLOG” on page 129.
- Facility Code - The facility level added to the event messages as they are sent to a syslog server. To set this value, refer to “LOGGING SET EVENTLOG” on page 129.

Example

This command displays the status of the event log and the syslog client:

```
logging show
```

LOGGING SHOW EVENTLOG

Syntax

`logging show eventlog`

Parameters

None.

Privilege Levels

Administrator, read-write, and read-only

Description

This command displays the event messages in the event log. An example is shown in Figure 21. The events are displayed in reverse-chronology, with the newest entries listed first. The event log, in its default setting, displays all of its messages. To limit the display, set the event log's severity level with the LOGGING SET EVENTLOG command. For information, refer to "LOGGING SET EVENTLOG" on page 129.

```
Date        Time    Status     Message
----------------------------------------------------------------
04/21/2007  2:12:28::MN::RP::02/1::Port 7 Set to Missing Link
04/21/2007  2:12:26::MN::RP::01/1::Fiber Port 7 Online
04/21/2007  2:12:25::MN::RP::01/1::Copper Port 7 Online
04/21/2007  2:12:24::MN::RP::00/2::Fiber Port 5 Online
04/21/2007  2:12:24::MN::RP::00/2::Copper Port 5 Online
04/21/2007  2:12:22::EV::RP::00/M::SSH Server Enabled
```

Figure 21. LOGGING SHOW EVENT-LOG Command

The fields are defined here:

- Date - The date of the event.
- Time - The time of the event.
- Status - The event status, consisting of the severity level and the message's classification. The possible severity levels are listed in Table 9.

Table 9. Severity Level Definitions

Severity Level	Definition
CR	Critical - Indicates critical events signal the loss of power to or the failure of a power module. Messages of this level can also reflect a physical change to the stacking feature, such as the removal of a stacking cable or the introduction of new chassis to a stack.
MJ	Major - Indicates major events announce a component failure to a fan or media converter module. Resets of and powering on a module or chassis are also categorized as major events.
MN	Minor - Indicates minor events encompass physical changes to a chassis, such as the installation or removal of a module. Connecting and disconnecting cables to the ports of the media converter channels are also listed as minor events.
EV	Event - Indicates event messages typically signal a change in the status of a management component, such as the Telnet or SSH server. The start and end points of remote Telnet and Secure Shell management sessions and TFTP functions are also members of this category.

The second part of an event's status is its classification of report (RP) or clear (CL). A report signals an event's occurrence while a clear signifies the resolution of a prior event. As an example, if a module's operating temperate were to exceed the temperate threshold, the management module would log a "High Temperature Threshold" event in the log with a classification of report, marking the occurrence of the event. And when the temperature dips below the threshold, the module logs the same event message, but with a clear classification signaling the prior event's resolution.

Only a few of the event messages can be both report and clear. For a list of the messages, refer to Table 11 on page 136.

❒ Message - The chassis and slot numbers of the source module of the event message.

Chassis and Slot IDs - The chassis ID and slot identifier of the source module of the message. The first number is the chassis ID number and the second is the slot number or letter, as shown in Figure 22.

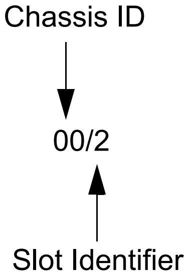


Figure 22. Chassis and Slot IDs

For background information on chassis ID numbers, refer to “Setting Chassis ID Numbers” on page 18. For the slot identifiers, refer to Table 10.

Table 10. Slot Identifiers

Identifier	Slot
1, 2, ...	Media converter slot.
A or B	Power supply or fan module slot.
M	Management module slot.

The event messages are listed in Table 11.

Table 11. Event Messages

Message	Definition	Classification
Critical Level Messages		
Battery Low	The power charge in a module’s battery is low. The battery may need replacing.	Report
	The charge in the module’s battery returned to normal or the battery was replaced.	Clear
Power Failure	The input voltage of a power supply module dropped below or exceeded the permitted operating range.	Report
	The input voltage of a power supply module returned to the proper operating range.	Clear

Table 11. Event Messages (Continued)

Message	Definition	Classification
Stacking Port Link	A Stack port on the management module or the AT-MCF2000S Stacking Module established or lost its link to another Stack port.	Report
Major Level Messages		
Chassis Managership Acquire	A media converter module has acquired the second priority to the CMN_Grant which allows access to the I2C bus.	Report
Chassis Managership Release	A media converter module has released the second priority to the CMN_Grant.	Report
Chassis Reset	The chassis was reset with the SYSTEM RESET CHASSIS command.	Report
Cold Boot	A media converter module loaded its boot loader and management software after receiving power. It generates this message when the chassis is powered on or if it is installed while a unit is powered on.	Report
Fan # Failure	A cooling fan in a power supply or fan module stopped.	Report
	A cooling fan resumed operating after having stopped.	Clear
High Temperature Threshold	A module's operating temperature exceeded the temperature threshold set with the SYSTEM SET MODULE command.	Report
	A module's operating temperature returned below its temperature threshold.	Clear
Module Reset	A media converter module started the process of initializing its boot loader and AT-S85 Management Software after it was reset with the SYSTEM RESET MODULE command. The completion of the initialization process is signaled with the Warm Boot message.	Report
Warm Boot	A media converter module completed the initialization of its management software after being reset with the SYSTEM RESET MODULE command.	Report

Table 11. Event Messages (Continued)

Message	Definition	Classification
Minor Level Messages		
Authentication Failure	The management software denied access to an individual who attempted to locally or remotely log on to the management module with an invalid user name or password.	Report
Copper|Fiber Port # Offline	A port in a media converter channel lost its link to the network device.	Report
Copper|Fiber Port # Online	A port in a media converter channel established a link to a network device.	Report
Copper|Fiber Port # RX SML	A port in a media converter channel is receiving the Smart MissingLink signal. This is an indication that the port is connected to another media converter that supports the Smart MissingLink mode, forming a chain of media converters. Media converters that support the Smart MissingLink mode pass the loss of a link on a port to all the media converters in the chain.	Report
Copper|Fiber Port # TX SML	A port in a media converter channel is sending the Smart MissingLink signal by pulsing its transmitter once a second to indicate that its companion port in the channel cannot establish a link with a network device.	Report
Module Inserted	The management module detected a media converter, power, or fan module while initializing its management software after a power cycle or reset. Alternatively, a module was installed in a slot in the chassis while the chassis was powered on.	Report
Module Removed	The management module stopped detecting a media converter, power, or fan module during a power cycle or reset. Alternatively, a module was removed from a slot in the chassis while the chassis was powered on.	Report

Table 11. Event Messages (Continued)

Message	Definition	Classification
Port # Mode Set to <operating mode>	A channel’s operating mode was changed to Link Test, Missing Link, or Smart Missing Link. “Port #” refers to the channel number. For example, the message “Port 1 Mode Set to Smart MissingLink” signals that channel 1 on a media converter module was set to the Smart MissingLink mode.	Report
Event Level Messages		
BM update its BM.cfg in MM	The media converter module upgraded its configuration in the management module.	Report
MM overwrite BM cfg	The management module configuration overwrote the media module configuration.	Report
SSH Server Disabled	The SSH server, used for remote management of the chassis or stack with an SSH client, was disabled with the SSH DISABLE command.	Report
SSH Server Enabled	The SSH server was enabled with the SSH ENABLE command.	Report
SSH Session Close	A remote SSH client ended a management session with the management module.	Report
SSH Session Open	A remote SSH client established a management session with the management module.	Report
Telnet Server Disabled	The Telnet server, used for remote management of the chassis or stack from a Telnet client, was disabled with the TELNET DISABLE command.	Report
Telnet Server Enabled	The Telnet server was enabled with the TELNET ENABLE command.	Report
Telnet Session Open	A remote Telnet client established a management session with the management module.	Report
Telnet Session Close	A remote Telnet client ended a management session with the management module.	Report

Table 11. Event Messages (Continued)

Message	Definition	Classification
TFTP Session Open	The management module uploaded or downloaded a file during a local or remote management session using TFTP. For example, you would see this message if you downloaded new management software onto the modules using TFTP.	Report
TFTP Session Close	The management module completed uploading or downloading a file to a TFTP server.	Report
Xmodem Session Close	The management module completed downloading a file using Xmodem.	Report
Xmodem Session Open	The management module completed downloading a file during a local management session using Xmodem. For example, this message is displayed if you use Xmodem to download new management software onto the modules or download a master configuration file to the module's file system.	Report

Example

This command displays the events in the event log:

```
logging show event-log
```

Chapter 9

Configuration File Commands

This chapter describes commands that control the master configuration and the auxiliary configuration files. This chapter contains the following sections:

Overview

The management and media converter modules store their parameter settings in a series of files called *configuration files*. These files enable the modules to retain their parameter settings even when they are moved to a different slot or chassis or when the chassis is reset or power cycled. This saves you from having to reconfigure the parameter settings when you power cycle a chassis or move a module.

The modules do not automatically update their configuration files when you change a parameter setting. Instead, you must initiate the update of the configuration files with this command:

```
config save
```

When you issue this command, all the modules in the chassis or stack update their configuration files to match their current operating parameters.

The management module has in its file system the *master configuration file*. This file contains the parameter settings for all the modules in a chassis and is used by the management module to configure the settings of the modules whenever you reset or power cycle a chassis.

The media converter modules have *auxiliary configuration files* that store their individual configuration settings. These files are primarily used to build the master configuration file on the management module. But the auxiliary configuration files also enable the modules to retain their settings when you move them to a different slot in a chassis or to an entirely different chassis.

The management and media converter modules come with predefined-auxiliary-configuration files, but there is no predefined-master-configuration file on the management module. You must create it as part of the initial configuration procedure of the chassis. For instructions, refer to “Creating a Master Configuration File” on page 29.

When you issue the CONFIG SAVE command to save your parameter changes, the management module updates the master configuration file using the auxiliary configuration files from the media converter modules. Here is an outline of the process:

1. When the CONFIG SAVE command is issued, all the modules in the chassis or stack update their auxiliary configuration files to reflect their current parameter settings. The filenames are “BM.CFG” for a media converter’s file and “MM.CFG” for the management module’s file. These file naming conventions cannot be changed.

2. The media converter modules transmit a copy of their updated auxiliary configuration files to the management module through the backplane in the chassis.
3. When the management module stores an auxiliary configuration file in its file system, it adds the chassis ID number and the slot number of the source module to the filename in order to distinguish between the various files. An example is "BM_0_1.CFG." The first number is the chassis ID and the second is the slot number. This file naming convention cannot be changed.
4. After the management module has received updated auxiliary configuration files from all the media converter modules, it concatenates the files to form a new, updated master configuration file for the entire chassis or stack.

The entire process is usually completed in a of couple seconds, but it can vary depending on the number of media converter modules in the chassis or stack and the number of parameter settings.

When a chassis is power cycled or reset, the modules receive their configuration settings from the management module by a reversal of the process used in creating the file. The management module creates individual auxiliary configuration files for the modules from its master configuration file and transmits the files through the backplane to the modules, which process the commands to configure their parameter settings.

Creating a New Master Configuration File

There are several ways you can create a new master configuration file. One method is with the CONFIG SAVE FILESYSTEM command. This command creates a new master configuration file that contains the current settings of the modules in the chassis or stack. In the following example, the new master configuration file, "mcf_ai_traffic.cfg," is created on a management module in a chassis with an ID of 0:

```
config save filesystem=system://0/m/mcf_ai_traffic.cfg
```

Another way to create a new master configuration file is to edit an existing file with a text editor by uploading it from the file system on the management module to your management workstation, editing it with a text editor, and downloading it again to the management module. The instructions for uploading or downloading a file to a module's file system are found in Chapter 10, "File System Commands" on page 165. For information about editing the file, refer to "Editing a Master Configuration File" on page 146.

You can also create a new master configuration file by copying an existing file in the management module's file system with the FILE COPY command. This example creates a copy of the source file "mcf_ai_traffic.cfg." The new file is "mcf_24a_traffic.cfg."

```
file copy srcfile=system://0/m/mcf_ai_traffic.cfg
dstfile=system://0/m/mcf_24a_traffic.cfg
```

This command is described in Chapter 10, “File System Commands” on page 165.

Specifying the Active Master Configuration File

A management module can have more that one master configuration file in its file system, but only one file can be active at a time. This file is referred to as the *active master configuration file*. It is this file that the management software updates in response to the CONFIG SAVE command and refers to when configuring the parameter settings of a chassis after a power cycle.

The command for specifying the active master configuration file on the management module is the CONFIG SET command. After you have designated a new active master configuration file on a management module, you should do one of the following:

- ❒ If you want the management module to configure the modules in the chassis with the settings in the new active file, issue the CONFIG RUN command.

Note
Issuing the CONFIG RUN command may momentarily disrupt the flow of traffic through the media converter channels as the modules reconfigure their settings.

- ❒ If you want to overwrite the settings in the file with the current settings of the modules, issue the CONFIG SAVE command, instead. This might be appropriate in situations where you did not want to use the settings in the new active master configuration file, and instead want to overwrite the settings in the file with the current configuration. Naturally, this does not result in a disruption of network traffic through the media converter channels.

To view the name of the active master configuration file, use the CONFIG SHOW command.

Auxiliary Configuration Files

As previously explained, a module stores its individual settings in an auxiliary configuration file in its file system. This type of configuration file is primarily used in creating the active master configuration file on the management module. However, an auxiliary configuration file also enables a module to retain its settings when it is moved to a different slot or chassis, which, in some situations, may save you from having to reconfigure the module.

When you remove a media converter module from a chassis and install it into a different slot, either in the same or a different chassis, it immediately queries the management module to determine whether:

- ❒ the slot was used before and, if it was,
- ❒ if the previous module was the same model.

If the slot was not used before or the previous module was a different model, the media converter module configures its parameter settings using its auxiliary configuration file in its file system, thereby maintaining its previous settings.

When a media converter module is installed into a slot that was used previously by the same model, the management module extracts the previous module’s settings from its active master configuration file and sends them to the media converter module through the backplane of the chassis. The media converter module, after receiving the settings, configures its parameters, accordingly. In this manner, the media converter module operates with the same settings as the module it replaced.

You may want to retain the auxiliary configuration file of an media converter module. In this case, you can disable the automatic overwriting of a media converter module configuration file with the CONFIG OVERWRITE command. In the following example, you disable the automatic overwriting of the media converter module configuration file for media converter 2 in a chassis with an id of 0:

```
config overwrite disable Id=0/2
```

Note
You should never need to rename, copy, delete, or upload an auxiliary configuration file from the file system of a media converter module. Make any parameter changes directly to the master configuration file in the file system on the management module, either through the command line interface or by editing the file.

Note
The AT-MCF2012LC and AT-MCF2012LC/1 Media Converter Modules are considered different models by the management software.

Editing a Master Configuration File

You can edit the master configuration file on the management module with a text editor at your management station by uploading the file from the management module using a TFTP server. You cannot edit it directly on the management module. After you have edited the file, you can download it to the management module and designate it as the active master configuration file on the module.

For instructions on how to upload and download a master configuration file to a management module, refer to “FILE UPLOAD” on page 191 and “FILE DOWNLOAD” on page 176. To designate the active master configuration file of the management module, refer to “CONFIG SET” on page 160.

The following sections describe the various parts of a master configuration file and the supported commands for each section.

File Header Lines

At the top of the file are three lines of header information, shown in Figure 23. These lines should never be modified or deleted.

```
## Filename: MM.cfg
## Model Type: AT-MCF2000M
## MAC Address: 00:15:77:70:7A:25
```

Figure 23. Management Module Configuration Header

System Configuration

The commands in this section define general information about the management module.

```
### System Configuration
system set asynchronous baudrate = 115200
system set console timeout=10
system set contact "none"
system set hostname "none"
system set location "none"
system set mymodule id=0/0 name="none"
system set mymodule id=0/0 temperature-threshold=60
system set mymodule id=0/a temperature-threshold=60
system set mymodule id=0/b temperature-threshold=60
```

Figure 24. System Configuration Section

The section accepts the following AT-S97 Management Software commands:

- "SYSTEM SET ASYNCHRONOUS" on page 58
- "SYSTEM SET CONSOLE" on page 61
- "SYSTEM SET CONTACT" on page 62
- "SYSTEM SET HOSTNAME" on page 63
- "SYSTEM SET LOCATION" on page 64
- "SYSTEM SET MODULE" on page 86

The module's name is set with a modified version of the SYSTEM SET MODULE command, where the MODULE keyword is replaced with MYMODULE and the management module slot is indicated in the ID parameter with "0" (zero) rather than "M". This modified command also sets the temperature thresholds of the management module and the power supply and fan modules. The command with the slot ID of "0" (zero) sets the temperature threshold for the management module while the commands with the slot IDs of "A" and "B" (for example, "0/A" and "0/B") set this parameter for the power supply and fan modules. For further information on this command, refer to "SYSTEM SET MODULE" on page 86.

IP Configuration

The commands in this section define the IP configuration of the management module.

```
### Ip Configuration
ip dhcp disable
ip set ip-address=192.168.1.2
ip set subnetmask=255.255.255.0
ip set default-gateway=0.0.0.0
```

Figure 25. IP Configuration Section

This section accepts the following commands:

- "IP DHCP DISABLE" on page 50
- "IP DHCP ENABLE" on page 51
- "IP SET" on page 52

Log Configuration

This section controls the event log and the syslog client.

```
### Log Configuration
logging enable eventLog
logging enable sysLog
logging set sysLog host=0.0.0.0
logging set sysLog facility-code=1
logging set eventLog severity-level=event
```

Figure 26. Log Configuration Section

The section accepts the following commands:

- “LOGGING DISABLE EVENTLOG” on page 125
- “LOGGING DISABLE SYSLOG” on page 126
- “LOGGING ENABLE EVENTLOG” on page 127
- “LOGGING ENABLE SYSLOG” on page 128
- “LOGGING SET EVENTLOG” on page 129
- “LOGGING SET SYSLOG” on page 131

NTP Configuration

This section controls the NTP client for setting the modules date and time from an NTP server on your network or the Internet.

```
### Ntp Configuration
ntp set server=0.0.0.0
ntp disable
```

Figure 27. NTP Configuration Section

This section accepts the following commands:

- “NTP DISABLE” on page 116
- “NTP ENABLE” on page 117
- “NTP SET” on page 118

Telnet and SSH Configuration

This section controls the Telnet and SSH servers for remote management of the chassis from a Telnet or SSH client.

```
### Telnet & SSH Configuration
telnet disable
ssh disable
```

Figure 28. Telnet and SSH Configuration Section

This section accepts the following commands:

- "TELNET DISABLE" on page 198
- "TELNET ENABLE" on page 199
- "SSH DISABLE" on page 212
- "SSH ENABLE" on page 213

User Configuration

This section controls the manager accounts.

```
### User Configuration
user config name=manager priv=admin pwd=3af00c6cad11f7ab5db4467b66ce503eff
```

Figure 29. User Configuration Section

Note
Do not modify existing manager accounts or add new accounts by editing the master configuration file. Instead, use the command line interface in the management software. You can delete accounts by deleting the corresponding line in the file, but do not delete the predefined manager account (that is, NAME=MANAGER). For further information, refer to Chapter 14, "Manager Account Commands" on page 215.

Blade Configuration

This section controls the operating parameters of the channels and ports on a media converter module. A master configuration file will have a separate Blade Configuration section for each media converter module in the chassis or stack.

The section is prefaced with three header lines that identify the media converter module in the chassis controlled by the commands in the section. An example is shown in Figure 30.

```
## Filename: BM_0_2.cfg
## Model Type: AT-MCF2012LC
## MAC Address: 00:15:77:70:7A:2C
```

Figure 30. Blade Configuration Header

The Filename line identifies the name of the auxiliary configuration file used to create that portion of the master file as well as the media converter module controlled by the commands. The numbers in the filename identify the module. The first number represents the chassis ID and the second number the slot number. For example, the auxiliary configuration filename “BM_0_2.cfg” in Figure 30 identifies the media converter module in slot 2 of the chassis with an ID number of 0.

The Model Type field specifies the model name of the media converter module and the MAC Address specifies its MAC address.

Note
The header lines of a Blade Configuration section should not be modified or deleted.

The first subsection in a Blade Configuration is illustrated in Figure 31. It sets the operating modes of the media converter channels on the module with a modified version of the SYSTEM SET INTERFACE command. The ID parameter of the command is replaced with a PORTID parameter, which specifies the channel number. For example, PORTID=1 designates channel 1, which on the AT-MCF2012LC and AT-MCF2012LC/1 Media Converter Modules represents twisted pair port 1 and fiber optic port 1, PORTID=2 designates channel 2 of twisted pair port 2 and fiber optic port 2, and so on.

```
### Blade Configuration

system set interface portId=1 OpMode=link-test
system set interface portId=2 OpMode=link-test
system set interface portId=3 OpMode=link-test
system set interface portId=4 OpMode=link-test
system set interface portId=5 OpMode=link-test
```

Figure 31. Blade Configuration - Operating Mode Section

Note the following guidelines when modifying the commands in this section:

- Each channel must have its own command line.
- If you delete a command, the corresponding channel's operating mode will be Link Test, the default value.
- As previously mentioned, the PORTID parameter must specify just the channel number. Do not include a chassis ID or slot number. The latter are defined in the header lines of the Blade Configuration section.

The next subsection in a Blade Configuration, shown in Figure 32, configures the operating parameters of the ports on the media converter module, both twisted pair and fiber optic. The port operating parameters are set with a modified version of the SYSTEM SET PORT command, where the values in the ID parameter are truncated to the channel number and port letter. For a description of this command, refer to "SYSTEM SET PORT" on page 89.

```
system set port id=1/a ingress-rate-limit=none egress-rate-limit=none
system set port id=1/b duplex=full ingress-rate-limit=none egress-rate-
limit=none
system set port id=2/a speed=100 duplex=full crossover=mdi
system set port id=2/a ingress-rate-limit=128k egress-rate-limit=none
system set port id=2/b duplex=full ingress-rate-limit=none egress-rate-
limit=none
system set port id=3/a ingress-rate-limit=none egress-rate-limit=none
system set port id=3/b duplex=full ingress-rate-limit=none egress-rate-
limit=none
system set port id=4/a speed=10 duplex=full crossover=mdi
system set port id=4/a ingress-rate-limit=none egress-rate-limit=none
system set port id=4/b duplex=full ingress-rate-limit=none egress-rate-
limit=none
```

Figure 32. Blade Configuration - Port Operating Parameters

Note the following guidelines when modifying the commands in this section:

- Each port must have its own command line.
- A port can have more than one command line.
- A command line cannot exceed eighty characters.
- If you delete a port's configuration command from the file, the port operates with the default settings.
- The ID parameter specifies just the channel number and port letter.

The name of a media converter module and the temperature threshold are controlled with the commands in the final part of a Blade Configuration section, shown in Figure 33.

```
system set mymodule id=1/0 name="none"
system set mymodule id=1/0 temperature-threshold=60
system set mymodule id=1/a temperature-threshold=60
system set mymodule id=1/b temperature-threshold=60
```

Figure 33. Blade Configuration - Module Name and Temperature Threshold Section

The first two lines control the module’s name and temperature threshold. The commands are a modified version of the SYSTEM SET MODULE command, with the MYMODULE keyword substituting for the MODULE keyword, as explained earlier in the System Configuration section. Do not change the ID values. Though in all other cases a slot “0” designation would indicate the management module, this is not true for these lines in the Blade Configuration section. Here, the “0” slot designation signifies the module itself, in this case a media converter module.

The final two lines with the IDs “0/A” and “0/B” can be ignored.

Guidelines to Editing a Master Configuration File

The following guidelines apply to editing a configuration file:

- The text editor must be able to store the file as ASCII text. Do not use special formatting codes, such as boldface or italics.
- A command cannot exceed eighty characters.
- Each command must start flush left against the margin.
- To comment out a command so that the media converter does not perform it, precede the command with three pound symbols (#).

Command Summary

Table 12 summarizes the configuration file commands.

Table 12. Configuration File Commands

Command	Description
“CONFIG OVERWRITE” on page 154	Overrides the automatic overwriting of a media converter module configuration file.
“CONFIG RUN” on page 155	Configures the parameter settings on all the modules using the active master configuration file on the management module

Table 12. Configuration File Commands (Continued)

Command	Description
CONFIG SAVE on page 157	Updates the active configuration file with the latest changes to the parameter settings. Also creates new master configuration files.
“CONFIG SAVE FILESYSTEM” on page 158	Creates a new master configuration file.
CONFIG SET on page 160	Selects a new active master configuration file.
CONFIG SHOW on page 162	Displays the name of the active and current master configuration files on the management module.

CONFIG OVERWRITE

Syntax

```
config overwrite enable|disable Id=c/s
```

Parameters

enable	Enables the configuration overwrite command. This is the default value.
disable	Disables the configuration overwrite command.
c/s	Indicates the chassis and slot.

Privilege Levels

Administrator and read-write.

Description

This command enables or disables the Management module to overwrite the configuration on the specified Blade module.

This command is useful if you want to retain the auxiliary configuration file of an media converter module. In this case, you can disable the automatic overwriting of a media converter module configuration file with the disable parameter of the CONFIG OVERWRITE command.

Example

The following command disables the Management module ability to overwrite the configuration on module 2 in chassis 0:

```
config overwrite disable Id=0/2
```

CONFIG RUN

Syntax

```
config run
```

Parameters

None.

Privilege Levels

Administrator and read-write.

Description

This command configures the parameters settings on the modules in the chassis according to the settings in the active master configuration file on the management module. This command is typically used to configure the modules after you have designated a new active master configuration file on the management module. Here is the sequence of the commands to perform this function:

1. Designate a new active master configuration file for the chassis using the CONFIG SET command. For instructions, refer to "CONFIG SET" on page 160.

2. Configure the settings on the modules according to the settings in the file by performing this command.

This command is also useful if you configured the parameters of the modules but did not save them, and want to discard the changes and return to the original configuration of the modules. For example, perhaps you modified but did not save the settings of the ports on a media converter module, and want to discard the changes.

The result of the CONFIG RUN command is similar to the SYSTEM RESET CHASSIS command or power cycling the unit. The difference is that with the CONFIG RUN command the management software on the modules is not initialized which makes for a faster reset and configuration of the modules. A reset or a power cycle of a chassis can take upwards of one minute to complete while the modules initialize their management software. The CONFIG RUN command is much faster and is typically completed in just a few seconds.

Example

The following command sets the configuration on the modules according to the master configuration file:

```
config run
```

CONFIG SAVE

Syntax

```
config save
```

Parameters

None.

Privilege Levels

Administrator and read-write.

Description

This command updates the active master configuration file on the management module and the auxiliary configuration files on the media converter modules with the current parameter settings of the devices. You should enter this command whenever you have made parameter changes that you want the modules to retain even after a reset or a power cycle. For background information, refer to "Overview" on page 142.

Example

The following command updates the active configuration file:

```
config save
```

CONFIG SAVE FILESYSTEM

Syntax

```
config save filesystem=system://chassis/slot/filename.cfg
```

Parameter

filesystem	Specifies the location and name for the new master configuration file. This parameter consists of the following parts:

chassis	Specifies the ID number of the chassis that houses the management module where the file will be stored. The ID number for the chassis with a management module is either 0 or 31.
slot	Identifies the slot with the module where the new master configuration file is stored. Since a master configuration file must be stored in the file system on the management module, the only supported value for the slot is:

m	Identifies the management module slot and the AT-MCF2000M Management Module.

filename.cfg	Specifies a name for the new master configuration file. The name can be up to 15 alphanumeric characters, not including the extension. Spaces are allowed, but a name with spaces must be enclosed in double quotes. The filename must include the ".CFG" extension. Configuration filenames are case sensitive.

To view the ID and slot numbers of a chassis, refer to "SYSTEM SHOW CHASSIS" on page 96 or "SYSTEM SHOW CLUSTER" on page 99. To view the filenames of the current configuration files in a file system on a module, refer to "FILE SHOW" on page 188.

Privilege Levels

Administrator and read-write.

Description

This command creates a new master configuration file with the current parameter settings of the modules in the chassis. The file is stored in the file system on the management module. For background information, refer to “Overview” on page 142.

If, after creating a new master configuration file, you want to designate it as the active file on the management module, perform the CONFIG SET command. For instructions, refer to “CONFIG SET” on page 160.

Example

This command creates the new master configuration file “mcf pat traffic.cfg” with the current settings of all the modules in the chassis or stack. The chassis with the management module has an ID of 0:

```
config save filesystem=system://0/m/"mcf pat traffic.cfg"
```

CONFIG SET

Syntax

```
config set filesystem=system://chassis/slot/filename.cfg
```

Parameter

filesystem	Specifies the location and name of a master configuration file. This parameter consists of the following parts:

chassis	Specifies the ID number of the chassis with the management module where the file is stored. The ID number for a chassis with a management module is 0 or 31.
slot	Identifies the slot with the module and the master configuration file. Since a master configuration file is stored on the management module, the only supported value is:

m	Identifies the management module slot and the AT-MCF2000M Management Module.

filename.cfg	Specifies the name of a active master configuration file. The filename must include the ".CFG" extension and is case sensitive. To view the filenames of the configuration files in a file system on a management module, refer to "FILE SHOW" on page 188. If the filename has spaces, enclose it in double quotes (" ").

To view the ID and slot numbers of a chassis, refer to "SYSTEM SHOW CHASSIS" on page 96 or "SYSTEM SHOW CLUSTER" on page 99.

Privilege Levels

Administrator and read-write.

Description

This command designates the active master configuration file on the management module. For an explanation of the master configuration file, refer to "Overview" on page 142.

After designating an active master configuration file, do one of the following:

- ❐ To configure the modules in the chassis or stack according to the settings in the newly designated active master configuration file, issue the CONFIG RUN command. For instructions, refer to "CONFIG RUN" on page 155. Do not issue the CONFIG SAVE command.
- ❐ To overwrite the settings in the active master configuration file with the current settings of the modules, issue the CONFIG SAVE command.

Note the following before using this command:

- ❐ To view the name of the active master configuration file, see "CONFIG SHOW" on page 162.
- ❐ The designated file must already exist. To view the configuration files in the management module's file system, see "FILE SHOW" on page 188. Configuration files have a ".cfg" extension. To create a new configuration file, refer to "CONFIG SAVE" on page 157.

For further information, refer to "Specifying the Active Master Configuration File" on page 144.

Examples

This command designates the file "mc22.cfg" in the file system on the management module as the active master configuration file. The chassis has the ID number of 1:

```
config set filesystem=system://1/m/mc22.cfg
```

This command designates the file "mcf2000 b12.cfg" as the active master configuration file for the chassis with an ID number of 0:

```
config set filesystem=system://0/m/"mcf2000 b12.cfg"
```

CONFIG SHOW

Syntax

`config show`

Parameters

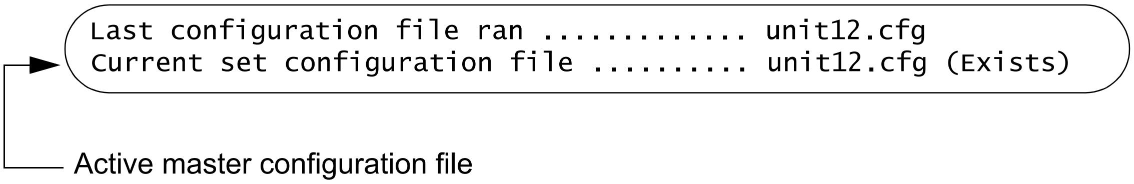
None

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays the names of the current and active master configuration files on the management module. An example is shown in Figure 34.



```
Last configuration file ran ............. unit12.cfg
Current set configuration file .......... unit12.cfg (Exists)
```

Figure 34. CONFIG SHOW Command

The “Last configuration file ran” field displays the name of the master configuration file used by the management module to configure the chassis during the last reset or power cycle.

The “Current set configuration file” field displays the name of the active master configuration file. It is this file that the management module updates when the CONFIG SAVE command is issued. This is also the file that is used to configure the chassis during the next reset or power cycle.

Here is an example of how the process works. Assume the chassis is currently using a master configuration file called “unit12.cfg,” as illustrated in Figure 34.

Now assume you decide to configure the settings on the chassis modules using a different master file called “mcf24.cfg.” If, after specifying the file as the new active configuration file with the CONFIG SET command, you issue the CONFIG SHOW command, the information in Figure 35 on page 163 is displayed.

```
Last configuration file ran ............. unit12.cfg
Current set configuration file .......... mcf24.cfg (Exists)
```

Figure 35. CONFIG SHOW Command with a New Active Master File

If you were to issue the CONFIG SAVE command at this point, the settings in the "mcf24.cfg" file would be overwritten by the current settings of the modules. Basically, the settings in the active configuration file would be replaced by the settings of the master configuration file used during the last reset, in this case "unit12.cfg," in addition to any changes that were make since the last reset or power cycle. And, in some situations, this might be the goal.

But if the goal is to configure the modules with the settings in "mcf24.cfg," you issue the CONFIG RUN command so that the management module configures the modules with the settings in the file. If, after issuing the CONFIG RUN command, you again entered the CONFIG SHOW command, the information in Figure 36 is displayed.

```
Last configuration file ran ............. mcf24.cfg
Current set configuration file .......... mcf24.cfg (Exists)
```

Figure 36. CONFIG SHOW Command with a New Current and Active Master File

Example

The following command displays the names of the current and active master configuration files on the management module:

```
config show
```

Chapter 10

File System Commands

This chapter describes the commands that allow you to manipulate the file system. This chapter contains the following sections:

Overview

The following sections describe the functions of the commands in this chapter.

Managing a Module's File System

You can use the commands in this chapter to display the configuration files in the file system on a management module, as well as copy, rename, and delete files. For example, you might create a copy of a master configuration file to maintain a history of the configuration settings of a chassis, or delete old master configuration files to keep the file system from becoming cluttered with obsolete files.

You can also use these commands to view the file system on a media converter module. However, this is unlikely ever to be necessary.

For more information on configuration files, refer to Chapter 9, “Configuration File Commands” on page 141.

Updating the AT-S85 and AT-S97 Management Software

Allied Telesis may periodically release and post on our web site new versions of the boot loaders and management software for the management and media converter modules in the AT-MCF2000 Series. You can update the software on your products by obtaining the newest files from the Allied Telesis web site.

New management software is downloaded onto the modules with the FILE DOWNLOAD command using the TFTP client in the AT-S97 Management Software together with a TFTP server on your network. For instructions, refer to “FILE DOWNLOAD” on page 176

Note

To avoid possible compatibility problems between the management and media converter modules, Allied Telesis recommends that all modules in a chassis or stack use the same version of the AT-S85 and AT-S97 Management Software. If the modules are running different versions, you must upgrade the operating software on all modules. To determine the version numbers of the modules’ software, use the SYSTEM SHOW CLUSTER command. For instructions, refer to “SYSTEM SHOW CLUSTER” on page 99.

Uploading or Downloading a Master Configuration File

The master configuration file on the management module can be modified with a text editor at your management workstation by uploading the file from the file system on the management module to a TFTP server. After you have edited the file, you can download it to the management module. Uploading and downloading the configuration file is achieved with the commands in this chapter. The full sequence of commands is:

1. Upload a master configuration file from the management module to a TFTP server using the FILE UPLOAD command. For instructions, refer to "FILE UPLOAD" on page 191.
2. Edit the file at your workstation. For instructions, refer to "Editing a Master Configuration File" on page 146.
3. Download the file to the management module using the FILE DOWNLOAD command. For instructions, refer to "FILE DOWNLOAD" on page 176.
4. Designate the file as the active master configuration file on the module with the CONFIG SET command. For instructions, refer to "CONFIG SET" on page 160.
5. Configure the modules using the CONFIG RUN command. For instructions, refer to "CONFIG RUN" on page 155.

Guidelines to Using the TFTP and Xmodem Client

The following guidelines apply to the TFTP and Xmodem client on the management module. See the following:

- ☐ "Guidelines to Using the TFTP Client" on page 167
- ☐ "Guidelines to Using the Xmodem Client" on page 168

If the management module and TFTP or Xmodem server are on different networks, the IP configuration on the management module must include a default gateway specifying the IP address of the first hop to reaching the server. For instructions, refer to Chapter 4, "IP Configuration Commands" on page 47.

Guidelines to Using the TFTP Client

The following guidelines apply to the TFTP client on the management module when uploading or downloading a file to the management module with the FILE UPLOAD or FILE DOWNLOAD commands:

- ☐ Your network must have a node with TFTP server software.
- ☐ To download a file, you must store the file on the TFTP server.
- ☐ Start the TFTP server software before performing the upload or download command.

- ❐ The 10/100/1000Base-T Management port on the AT-MCF2000M Management Module must be connected to the network. The management module communicates with the TFTP server through this port.
- ❐ The AT-MCF2000M Management Module must have an IP configuration. For instructions, refer to Chapter 4, “IP Configuration Commands” on page 47.
- ❐ The TFTP server must be a member of the same network as the management module or have access to it through Layer 3 routing devices.
- ❐ If the management module and TFTP server are on different networks, the IP configuration on the management module must include a default gateway specifying the IP address of the first hop to reaching the server. For instructions, refer to Chapter 4, “IP Configuration Commands” on page 47.

Guidelines to Using the Xmodem Client

The following guidelines apply to the Xmodem client on the management module when downloading a file to the management module with the FILE DOWNLOAD command:

- ❐ Your network must have a node with Xmodem server software.
- ❐ To download a file, you must store the file on the Xmodem server.
- ❐ Start the Xmodem server software before performing the download command.
- ❐ You must connect the 10/100/1000Base-T Management port on the AT-MCF2000M Management Module to the network. The management module communicates with the Xmodem server through this port.
- ❐ The AT-MCF2000M Management Module must have an IP configuration. For instructions, refer to Chapter 4, “IP Configuration Commands” on page 47.
- ❐ The Xmodem server must be a member of the same network as the management module or have access to it through Layer 3 routing devices.

Command Summary

Table 13 summarizes the file system commands.

Table 13. File System Commands

Command	Description
“FILE COPY” on page 170	Creates copies of the configuration files in the file systems of the management and media converter modules.

Table 13. File System Commands (Continued)

Command	Description
“FILE DELETE” on page 173	Deletes the configuration files from the file systems on the modules.
“FILE DOWNLOAD” on page 176	Downloads new versions of the AT-S85 and AT-S97 Management Software from a TFTP or Xmodem server to the management and media converter modules. You can also download a modified master configuration file to the management module.
“FILE RENAME” on page 185	Renames the configuration files in the modules’ file systems.
“FILE SHOW” on page 188	Displays the names of the files stored in the file systems.
“FILE UPLOAD” on page 191	Primarily used to upload the master configuration file from the management module to a TFTP server for editing at a management workstation. Can also be used to upload configuration files between modules.

FILE COPY

Syntax

```
file copy srcfile=system://chassis/slot/filename.cfg
dstfile=system://chassis/slot/filename.cfg
```

Parameter

srcfile=system

Specifies the location and name of the master configuration file to copy. This parameter consists of the following parts:

chassis	Specifies the ID number of the chassis with the file. The value of the ID number is either 0 or 31.
slot	Identifies the slot with the module containing the file. Possible values are: m — Identifies the management module slot and the AT-MCF2000M Management Module. 1 or 2 — Specifies a slot number of a media converter module. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.
filename.cfg	Specifies the name of the master configuration file to copy. Enclose the filename in double quotes if it contains a space. The filename must include the ".CFG" extension. The name is case sensitive.

To view the ID and slot numbers of a chassis, refer to "SYSTEM SHOW CHASSIS" on page 96 or "SYSTEM SHOW CLUSTER" on page 99. To view the filenames in a file system on a module, refer to "FILE SHOW" on page 188.

dstfile=system

Specifies the name of the new copy of the master configuration file. The destination must have the same chassis and slot location as the source. The name can be up to 15 alphanumeric characters, not including the extension. Spaces are allowed, but a name with spaces must be enclosed in double quotes. The filename must be unique from all other files in the file system of the module and it must include the “.CFG” extension. The filename cannot start with the letters “mm” or “bm” because these are restricted by the management software.

Privilege Levels

Administrator and read-write.

Description

This command creates a copy of a master configuration file in the file system of the management module. You might create a copy of a file to maintain a history of the settings of the modules in the chassis or to create a backup copy. For background information on master configuration files, refer to Chapter 9, “Configuration File Commands” on page 141.

Review the following before copying a master configuration file:

- ❒ This command is primarily intended for creating copies of master configuration files on a management module. Although this command can also create copies of auxiliary configuration files, that should never be necessary.
- ❒ The copy of the file must be stored in the file system of the same module with the original file. To copy files between modules, refer to the FILE UPLOAD command. For instructions, refer to “FILE UPLOAD” on page 191.
- ❒ The filename of the source file is case sensitive. To verify the spelling and case of a file, use the FILE SHOW command. For instructions, refer to “FILE SHOW” on page 188.
- ❒ You do not have to perform the CONFIG SAVE command after copying a file.

Examples

This command creates a copy of the master configuration file “master2a.cfg” on the management module in a chassis with an ID number of 0. The copy will be “master2a_backup.cfg:”

```
file copy srcfile=system://0/m/master2a.cfg
dstfile=system://0/m/master2a_backup.cfg
```

This command creates a copy of the master configuration file “mc 11a.cfg” on a management module in a chassis assigned an ID of 0. The copy will be titled “mc 22 traffic.cfg:”

```
file copy srcfile=system://0/m/"mc 11a.cfg"
dstfile=system://0/m/"mc 22 traffic.cfg"
```

Note

The next example creates a copy of an auxiliary configuration file on a media converter module. This function should never be necessary.

This command creates a copy of the “BM.cfg” auxiliary configuration file on a media converter module in slot 2 in a chassis with an ID number of 0. The copy is named “BM_backup.cfg:”

```
file copy srcfile=system://0/2/BM.cfg
dstfile=system://0/2/"BM_backup.cfg"
```

FILE DELETE

Syntax

```
file delete filesystem=system://chassis/slot/filename.cfg
```

Parameter

system	Specifies the location of the file to delete. This parameter has the following parts:

chassis	Specifies the ID number of the chassis with the file. The value of the ID number is either 0 or 31.
slot	Identifies the slot with the module containing the file. Possible values are:

m	Identifies the management module slot with the AT-MCF2000M Management Module.
1 or 2	Specifies a slot number of a media converter module. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.

filename.cfg	Specifies the name of the configuration file to delete. The filename is case sensitive and must be enclosed in double quotes if it contains a space. The asterisk (*) can be used as a wildcard to delete files with similar names.

To view the ID and slot numbers of a chassis, refer to “SYSTEM SHOW CHASSIS” on page 96 or “SYSTEM SHOW CLUSTER” on page 99. To view the filenames in the file system on a module, refer to “FILE SHOW” on page 188.

Privilege Levels

Administrator and read-write.

Description

This command deletes files from the file systems of the management and media converter modules. You can use the command to remove unnecessary or obsolete configuration files from the modules. For background information on configuration files, refer to Chapter 9, “Configuration File Commands” on page 141.

Review the following before using this command:

- ❐ Allied Telesis does not recommend deleting the management module’s active master configuration file. If you do delete the file, you should afterwards specify a new active master configuration file with the CONFIG SET command. For further information, refer to “CONFIG SET” on page 160.
- ❐ Deleting a media converter’s configuration file (for example, BM_00_01.cfg) from the file system of the management module does not affect the operation of the media converter module or the management module.
- ❐ Deleting a configuration file (for example, BM.cfg) from a media converter’s file system is not recommended. Deleting the file does not affect the operation of the module, except if you remove the module and install it into a different slot. In the latter scenario, the module uses its default values or the values provided by the management module.
- ❐ The filename is case sensitive. To verify the spelling and case of a filename, use the FILE SHOW command. For instructions, refer to “FILE SHOW” on page 188.
- ❐ You do not have to perform the CONFIG SAVE command after deleting a file.

Examples

This command deletes the master configuration file “unit2a.cfg” from a management module in a chassis with an ID number of 0:

```
file delete filesystem=system://0/m/unit2a.cfg
```

This command deletes the master configuration file “unit14ab.cfg” from a management module in a chassis with an ID number of 0:

```
file delete filesystem=system://0/m/unit14ab.cfg
```

This command deletes all the configuration files starting with “BM” from management module in a chassis with an ID number of 0:

```
file delete filesystem=system://0/m/BM*.cfg
```

This command deletes the configuration file “BM.cfg” from the media converter module in slot 2 in a chassis with an ID number of 0:

```
file delete filesystem=system://0/2/BM.cfg”
```

This command deletes all the configuration files starting with “BM” from a media converter module in slot 2 in a chassis with an ID number of 0:

```
file delete filesystem=system://0/2/BM*.cfg
```

FILE DOWNLOAD

Syntax 1: Downloading the AT-S85 and AT-S97 Boot Loaders

```
file download srcfile=tftp://ipaddress/filename.bin
dstfile=system://chassis/slot/bootblock
```

Syntax 2: Downloading the AT-S85 and AT-S97 Management Software (Image Files)

```
file download srcfile=tftp://ipaddress/filename.img
dstfile=system://chassis/slot/appblock
```

Syntax 3: Downloading a Master Configuration File

```
file download srcfile=tftp://ipaddress/filename.cfg
dstfile=system://chassis/slot/filename.cfg
```

Syntax 4: Downloading a Configuration File from the Management Module to a Media Converter Module

```
file download srcfile=system//chassis/m/filename.cfg
dstfile=system://chassis/slot/filename.cfg
```

Parameters

srcfile=tftp

Specifies the IP address of the TFTP server and the name of the file to download to a module. This parameter has the following parts:

ipaddress	Specifies the IP address of the TFTP server.
filename	Specifies the name of the file on the TFTP server to download onto the management module or media converter module. Enclose the filename in double quotes if it contains a space. The filename extension must be ".BIN" for the boot loader, ".IMG" for the management software, and ".CFG" for a configuration file.

dstfile=system

Specifies the destination chassis and module for the file. This parameter consists of the following parts:

chassis

Specifies the ID number of a chassis. Possible values are:

* (asterisk)	Indicates all chassis in a stack.

	0 or 31	The chassis ID numbers are limited to these values.
slot	Identifies the slot number of a module. Possible values are:	
	* (asterisk)	Indicates all slots in a chassis.
	m	Identifies the management module slot.
	1 or 2	Specifies a slot number of a media converter module. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.
bootblock	Designates the area of flash memory reserved for the AT-S85 and AT-S97 boot loader files.	
appblock	Designates the area of flash memory reserved for the AT-S85 and AT-S97 Management Software.	
filename.cfg	Downloads a master configuration file from the TFTP server to the file system of the management module. This parameter designates a name for the file when the file is stored in the file system on the module. The name can be up to 15 alphanumeric characters, not including the extension. Enclose the filename in double quotes if it contains a space. The filename must include the ".CFG" extension.	

To view the ID and slot numbers of a chassis, refer to "SYSTEM SHOW CHASSIS" on page 96 or "SYSTEM SHOW CLUSTER" on page 99.

Privilege Levels

Administrator and read-write.

General Description

This command downloads new versions of the AT-S85 and AT-S97 boot loaders and management software to the management and media converter modules in a chassis from a TFTP server. Allied Telesis may post new versions of these files on our web site so our customers can update their equipment with the latest files.

You can also use this command to download a master configuration file that you edited at your management workstation to the management module.

To download a bootloader or image file onto all of the media converter modules in a system, use the FILE FASTDOWNLOAD command. See “FILE FASTDOWNLOAD” on page 183.

Description of Syntax 1

This command downloads a new version of a boot loader to a management or media converter module from a TFTP server. The boot loader is part of the operating system of a module.

The modules use different boot loaders. The AT-MCF2000M Management Module uses the AT-S97 boot loader and the media converter modules the AT-S85 boot loader. The boot loader files are identified by their “.BIN” filename extension and the “S85” and “S97” in the filenames.

A boot loader must be stored on a module in an area of memory referred to as BOOTBLOCK. This section of memory is separate from the file system and cannot be displayed with the FILE SHOW command. When you enter the FILE DOWNLOAD command, you must specify BOOTBLOCK as the destination. If you specify a filename as the destination, the command will store the file in the file system of the module. This is an inappropriate destination for a boot loader. (If you do inadvertently download a boot loader file into the file system of a module, you can delete it with the FILE DELETE command. For instructions, refer to “FILE DELETE” on page 173.)

After a module has received a new boot loader, it tests the file before writing it to BOOTBLOCK area of flash memory to determine whether the file is appropriate for its module type. If the file type is correct, it writes the file to the BOOTAPP section. If it is not, it discards the file. This protects the module from installing the wrong boot loader.

This command has the following guidelines:

- ☐ The filename extension of the source file must be “.BIN” and the destination must be BOOTBLOCK.
- ☐ When upgrading both the boot loader and the management software on the modules, you should download the new boot loader file first.

Since this command uses the TFTP client on the management module, Allied Telesis recommends reviewing the information in "Guidelines to Using the TFTP and Xmodem Client" on page 167 prior to using the command.

Note
A management module resets after receiving a new bootloader. The module is unresponsive to commands for approximately one minute while it initializes its AT-S97 Management Software.

Note
A media converter module resets after receiving a new bootloader and immediately resumes forwarding network traffic through its ports and channels using its default settings while it initializes its AT-S85 Management Software, a process that takes approximately one minute to complete. The module is unresponsive to management commands during the initialization process. At the completion of the process, the module configures its ports and channels according to the settings in the active master configuration file on the management module.

Description of Syntax 2

This command performs much the same function as syntax 1. But rather than downloading a boot loader file, it downloads a new version of the management software to a module. The management software comes in two versions, one for the management module, the AT-S97 Management Software, and another for the media converter modules, the AT-S85 Management Software. A management program file can be identified by the extension ".IMG" and the "S85" or S97" in its filename.

The management software is stored on a module in a special area of memory referred to as APPBLOCK. This must be the destination of the command when downloading the software.

Just as it does with a boot loader file, a module tests the file before it writes it to the APPBLOCK section of flash memory. Only after the module has verified that it is the correct file for its type of module does it write the file to memory. This protects the module from installing the wrong management software.

Note
A management module resets after receiving a new version of the AT-S97 Management Software. It is unresponsive to commands for approximately one minute while it initializes the new management software.

Note
A media converter module resets after receiving a new version of the AT-S85 Management Software, but immediately resumes forwarding network traffic through its ports and channels using its default settings while it initializes the new software. This process takes approximately one minute to complete. The module is unresponsive to management commands during the initialization process. At the completion of the process, the module configures its ports and channels according to the settings in the active master configuration file on the management module.

Description of Syntax 3

This command syntax downloads a master configuration file from a TFTP server to the file system of a management module. You might use this command after editing a configuration file at your workstation or when transferring a master configuration file from another chassis.

If, after downloading a new or edited master configuration file onto a management module, you want to configure the modules using the file, there are several additional commands you have to perform. First, you must designate the file as the active configuration file for the management module with the CONFIG SET command. Second, you must issue the CONFIG RUN command so that the modules configure themselves according to the commands in the file. For information, refer to Chapter 9, "Configuration File Commands" on page 141.

Description of Syntax 4

This syntax is reserved for future versions of the management software.

Examples of Downloading the AT-S85 and AT-S97 Boot Loaders

This command downloads a new version of the AT-S85 boot loader onto all the media converter modules in a chassis. The IP address of the TFTP server is 150.24.44.65 and the name of the file on the TFTP server is "ats85.bin":

```
file download srcfile=tftp://150.24.44.65/ats85.bin
dstfile=system://*/*/bootblock
```

Note
The above example is the preferred command for upgrading the boot loader on the media converter modules in a chassis. Downloading a new boot loader onto some but not all of the media converter modules may cause incompatibility issues.

The asterisk is used to indicate all slots in the chassis which means the management module receives the file as well. Since the AT-S85 boot loader is intended for media converter modules, it discards the file and generates an error message. You can ignore the message.

This command downloads a new version of the AT-S97 boot loader onto the management module in a chassis. The IP address of the TFTP server is 162.101.11.12 and the name of the file is "ats97.bin":

```
file download srcfile=tftp://162.101.1.12/ats97.bin
dstfile=system://*/m/bootblock
```

Note
The above example is the preferred command for upgrading the boot loader on the management module.

This command downloads a new version of the AT-S85 boot loader onto the media converter module in slot 1 in the chassis with an ID of 0. The IP address of the TFTP server is 149.72.23.5 and the name of the file is "ats85.bin":

```
file download srcfile=tftp://149.72.23.5/ats85.bin
dstfile=system://0/1/bootblock
```

Examples of Downloading the AT-S85 and AT-S97 Management Software

This command downloads a new version of the AT-S85 Management Software onto all of the media converter modules in a chassis. The IP address of the TFTP server is 150.24.44.65 and the name of the file is "ats85.img":

```
file download srcfile=tftp://150.24.44.65/ats85.img
dstfile=system://*/*/appblock
```

The asterisk is used to indicate all slots in the chassis which means the management module receives the file as well. Since the AT-S85 Management Software is intended for media converter modules, it will discard the file and generate an error message. You can ignore the message.

Note
The above example is the preferred command for upgrading the management software on the media converter modules in a chassis. Downloading management software onto some but not all of the modules of a chassis may cause compatibility problems.

This command downloads a new version of the AT-S97 Management Software onto the AT-MCF2000M Management Module in a chassis. The name of the file is “ats97.img:”

```
file download srcfile=tftp://149.72.23.5/ats97.img
dstfile=system://*/m/appblock
```

This command downloads a new version of the AT-S85 Management Software onto the media converter module in slot 1 of a chassis with ID of 0. The IP address of the TFTP server is 150.24.44.65 and the name of the file is “ats85.img:”

```
file download srcfile=tftp://150.24.44.65/ats85.img
dstfile=system://0/1/appblock
```

Example of Downloading a Master Configuration File

This command downloads the master configuration file “mc2000_22a.cfg” onto a management module from a TFTP server. The file is renamed “mcf2000 unit5a.cfg” in the file system of the module. The ID number of the chassis is 0:

```
file download srcfile=tftp://150.76.8.124/mc2000_22a.cfg
dstfile=system://0/m/"mcf2000 unit5a.cfg"
```

FILE FASTDOWNLOAD

Syntax

```
file fastdownload appblock|bootblock srcfile=tftp|xmodem://
ipaddress/filename
```

Parameters

appblock	Designates the area of flash memory reserved for the AT-S85 and AT-S97 Management Software.
bootblock	Designates the area of flash memory reserved for the AT-S85 and AT-S97 boot loader files.
srcfile=tftp	Specifies the IP address of the TFTP or Xmodem server and the name of the file to download to a module. This parameter has the following parts:

ipaddress	Specifies the IP address of the TFTP or Xmodem server.
filename	Specifies the name of the file on the TFTP or Xmodem server to download onto the management module or a media converter module. Enclose the filename in double quotes if it contains a space. The filename extension must be ".BIN" for the boot loader, ".IMG" for the management software, and ".CFG" for a configuration file.

Privilege Levels

Administrator and read-write.

General Description

This command downloads bootloader and image files to the media converter modules in a chassis or all of the media converter modules in a stack from a TFTP or Xmodem server. There are two commands you can use to download a file:

- ☐ FILE FASTDOWNLOAD command
- ☐ FILE DOWNLOAD command

The difference between the two commands is that the FILE FASTDOWNLOAD command only permits you to download bootloader and image files onto all of the media converter modules. The FILE DOWNLOAD command permits you to download bootloader, configuration, and image files on to individual media converter modules. As a result, you have to specify the chassis id and slot number for each command. For more information about the FILE DOWNLOAD command, see “FILE DOWNLOAD” on page 176.

Examples

The following commands provides a fast download of a Bootloader file from a remote server to all media converter modules. The IP address of the TFTP server is 192.100.10.1 and the file name is S85.bin:

```
file fastdownload bootblock srcfile tftp://192.100.10.1/
S85.bin
```

```
file fastdownload bootblock srcfile xmodem://S85.bin
```

The following commands provide a fast download of an application image file, S85.img, from a remote server to all media converter modules installed in a chassis:

```
file fastdownload appblock srcfile tftp://192.100.10.1/
file1.img
```

```
file fastdownload appblock srcfile xmodem://S85.img
```

FILE RENAME

Syntax

```
file rename srcfile=system://chassis/slot/filename
dstfile=system://chassis/slot/filename
```

Parameters

srcfile=system

Specifies the location and name of the master configuration file to rename. This parameter has the following parts:

chassis	Specifies the ID number of the chassis with the file. The value of the ID number is 0 or 31.
slot	Identifies the slot number of a module. Possible values are: m — Identifies the management module slot. 1 or 2 — Specifies a slot number of a media converter module. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.
filename	Specifies the name of the file to rename. The filename must include the ".CFG extension. The name is case sensitive and must be enclosed in double quotes if it has spaces. To verify the spelling and case of a file in a modules file system, use the FILE SHOW command. For instructions, refer to "FILE SHOW" on page 188.

dstfile=system

Specifies a new name for the master configuration file. The destination must be the same chassis and slot location as the source. The name can be up to 15 alphanumeric characters, not including the extension. Spaces are allowed, but a name with spaces must be enclosed in double quotes. The filename must be unique in the file system of the module and include the ".CFG" extension. The filename cannot start with the letters "mm" or "bm" because these letters are reserved by the management software.

Privilege Levels

Administrator and read-write.

Description

This command is used to rename master configuration files in the file system of the management module. Observe the following guidelines when using this command:

- If you rename the active master configuration file, the management software recreates it the next time you issue the CONFIG SAVE command. To view the name of the active master configuration file, refer to “CONFIG SHOW” on page 162.
- Though you can use the command to rename auxiliary configuration files (for example, BM.cfg or MM.cfg) in the file systems of the management and media converter modules, Allied Telesis does not recommend it. You should limit the use of this command to renaming the master configuration file.
- A filename cannot start with the letters “MM” or “BM.”
- You do not have to perform the CONFIG SAVE command after renaming a file.

For information on configuration files, refer to Chapter 9, “Configuration File Commands” on page 141.

Examples

This command renames the master configuration file “unit12a.cfg” on the management module to “u2 a7.cfg.” The chassis ID number is 0:

```
file rename srcfile=system://0/m/unit12a.cfg
dstfile=system://0/m/"u2 a7.cfg"
```

This command renames the master configuration file “mcf 2a.cfg” on the management module to “mcf aba traffic.cfg.” The chassis ID number is 0:

```
file rename srcfile=system://0/m/"mcf 2a.cfg"
dstfile=system://0/m/"mcf aba traffic.cfg"
```

Note
The following examples illustrate how to rename an auxiliary configuration file. This should never be necessary.

This command renames the media converter configuration file "BM_0_1.cfg" to "BM_0_1 backup.cfg" in the file system on the management module which has a chassis ID number of 0:

```
file rename srcfile=system://0/m/BM_0_1.cfg
dstfile=system://0/m/"BM_0_1 backup.cfg"
```

This command renames the configuration file "BM.cfg" to "BM_2.cfg" in the file system of a media converter module in slot 1 of a chassis with an ID of 0:

```
file rename srcfile=system://0/1/BM.cfg
dstfile=system://0/1/BM_2.cfg
```

FILE SHOW

Syntax

```
file show filesystem=system://chassis/slot/filename
```

Parameters

system	Specifies the chassis and module with the file system to display. This parameter has the following parts:		
	chassis	Specifies the ID number of the chassis with the file. The value of the ID number is 0 or 31.	
	slot	Specifies the ID number or letter of the slot with the module. Possible values are:	
		m	Identifies the slot with the AT-MCF2000M Management Module.
		1 or 2	Specifies a slot with a media converter module. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.
	filename	Specifies the filenames to view. The filename is case sensitive. You can use the asterisk (*) as a wildcard.	

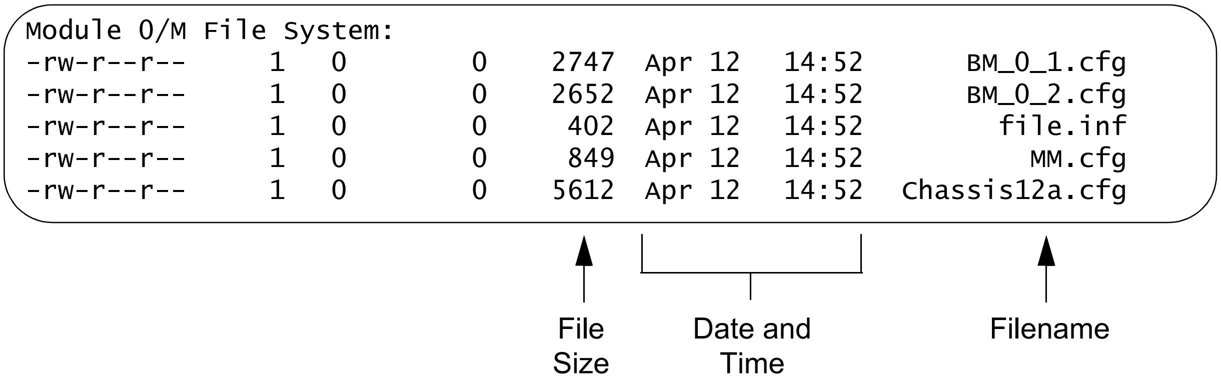
To view the ID and slot numbers of the devices in a chassis or stack, refer to “SYSTEM SHOW CHASSIS” on page 96 or “SYSTEM SHOW CLUSTER” on page 99.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays the names of the files in the file system on a management module. An example is shown in Figure 37. You might view the file system to verify the spelling and case of the filename of a master configuration file prior to designating it as the active master configuration file or uploading it to a TFTP server.



```
Module 0/M File System:
-rw-r--r--     1   0        0    2747  Apr 12   14:52       BM_0_1.cfg
-rw-r--r--     1   0        0    2652  Apr 12   14:52       BM_0_2.cfg
-rw-r--r--     1   0        0     402  Apr 12   14:52         file.inf
-rw-r--r--     1   0        0     849  Apr 12   14:52           MM.cfg
-rw-r--r--     1   0        0    5612  Apr 12   14:52  Chassis12a.cfg
```

Figure 37. FILE SHOW Command

The first four columns can be ignored. The remaining columns are defined here:

- File size - The size of the file in bytes.
- Date and Time - The date and time when the file was created or last modified.
- Filename - The name of the file.

This command can also display the contents of a file system on a media converter module, but you should never need to do that. For information on configuration files, refer to “Overview” on page 142.

Examples

This command displays all the filenames in the file system on the management module in a chassis with an ID number of 0:

```
file show filesystem=system://0/m/*.*
```

This command displays the names of just the configuration files on a management module in a chassis with an ID number of 0:

```
file show filesystem=system://0/m/*.cfg
```

This command displays the names of the configuration files starting with “Ch” on a management module in chassis with an ID number of 0:

```
file show filesystem=system://0/m/Ch*.cfg
```

This command displays the names of the configuration files on the management module in a chassis with an ID number of 0:

```
file show filesystem=system://0/m/*.cfg
```

Note
The following examples illustrate how to display the files in the file system on a media converter module. This function should never be necessary.

This command displays all the filenames on a media converter module in slot 2 in a chassis with an ID number of 0:

```
file show filesystem=system://0/2/*.*
```

This command displays the filenames of just the configuration files on a media converter module in slot 1 in a chassis with an ID number of 0:

```
file show filesystem=system://0/1/*.cfg
```

FILE UPLOAD

Syntax 1: Uploading a Configuration File to a TFTP Server

```
file upload srcfile=system://chassis/slot/filename.cfg
dstfile=tftp://ipaddress/filename.cfg
```

Syntax 2: Uploading a Configuration File from a Media Converter Module to the Management Module

```
file upload srcfile=system://chassis/slot/filename.cfg
dstfile=system://chassis/m/filename.cfg
```

Parameters

srcfile=system

Specifies the location and name of the file to upload. This parameter has the following parts:

chassis	Specifies the ID number of the chassis with the file. The value of the ID number is 0 or 31.
slot	Identifies the slot with the module and file. Possible values are:
	m — Identifies the management slot with the AT-MCF2000M Management Module.
	1 or 2 — Specifies a slot number of a media converter module. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.
filename	Specifies the name of the file to upload. A filename with a space must be enclosed in double quotes. The filename extension must be ".CFG." The filename is case sensitive.

To view the ID and slot numbers of the devices in a chassis or stack, refer to "SYSTEM SHOW CHASSIS" on page 96 or "SYSTEM SHOW CLUSTER" on page 99. To view the files in a file system, refer to "FILE SHOW" on page 188.

dstfile=tftp	Specifies the TFTP server to receive the file. This parameter uploads a configuration file from a management or media converter module to a TFTP server. This parameter has the following parts:

ipaddress	Specifies the IP address of the TFTP server.
filename.cfg	Specifies a name for the file when uploaded to the FTP server. Enclose the filename in double quotes if it contains a space. The filename extension must be ".CFG."

dstfile=system	Specifies the module to receive the file when transferring a configuration file between modules in a chassis. This parameter has the following parts:

chassis	Specifies the ID number of the chassis with the file. The value of the ID number is 0 or 31.
slot	Identifies the slot with the management module to receive the file. The only accepted value for this parameter is:

m	Identifies the management slot with the AT-MCF2000M Management Module.

Privilege Levels

Administrator and read-write.

Description of Syntax 1

This command uploads a configuration file from a management module or media converter module to an TFTP server. Typically, this command is used to upload a master configuration file from a management module before editing it at your workstation or transferring it to another management module in another chassis.

Although this command can also be used to upload a media converter's auxiliary configuration file from the file system of a management module or media converter module, Allied Telesis recommends against this. Editing or transferring an auxiliary configuration file serves no purpose since the settings are overwritten by the master configuration file on the management module after the file is installed on a media converter module. For further information on configuration files, refer to "Overview" on page 142.

Description of Syntax 2

This command syntax is reserved for future versions of the management software.

Examples of Uploading a Configuration File to a TFTP Server

This command uploads the master configuration file “traffic_n2.cfg” from a management module to a TFTP server with the IP address of 150.24.44.65. The chassis has an ID number of 0:

```
file upload srcfile=system://0/m/traffic_n2.cfg
dstfile=tftp://150.24.44.65/traffic_n2.cfg
```

This command uploads the master configuration file “mic traf ata.cfg” from the management module of a chassis with an ID number of 0. The IP address of the server is 149.72.23.5 and the name of the file is changed to “mic traf bc.cfg on the TFTP server:

```
file upload srcfile=system://0/m/"mic traf ata.cfg"
dstfile=tftp://149.72.23.5/”mic traf bc.cfg”
```

Note
The following example shows how to upload an auxiliary configuration file from a media converter module. This function should never be necessary.

This command uploads the auxiliary configuration file “BM.cfg” from a media converter module in slot 1 of a chassis with an ID number of 0:

```
file upload srcfile=system://0/1/BM.cfg
dstfile=tftp://150.24.44.65/BM.cfg
```

Chapter 11

Telnet Server Commands

This chapter describes commands that control the management module's Telnet application protocol server. This chapter contains the following sections:

- ❒ "Overview" on page 196
- ❒ "TELNET DISABLE" on page 198
- ❒ "TELNET ENABLE" on page 199
- ❒ "TELNET SHOW" on page 200

Note
Remember to save your parameters changes in the active master configuration file with the CONFIG SAVE command. For information, refer to "Saving Your Configuration Changes" on page 17 or "CONFIG SAVE" on page 157.

Overview

The commands in this chapter control the management module's Telnet application protocol server, used for remote management of the chassis from a Telnet client on your network. The commands TELNET ENABLE and TELNET DISABLE enable and disable the server, while the TELNET SHOW command displays the current status of the server. The server's default setting is disabled.

To start a remote Telnet management session on the management module, enter the IP address of the management module in the Telnet client at your remote management workstation. For further instructions, refer to "Starting a Remote Telnet or Secure Shell Management Session" on page 22.

The Telnet server uses protocol port 23. You cannot change this value.

Telnet Server Guidelines

These guidelines apply to managing the chassis remotely with a Telnet client:

- ❐ The management module must have an IP configuration. For instructions, refer to Chapter 4, "IP Configuration Commands" on page 47.
- ❐ The 10/100/1000Base-T Management port on the management module must be connected to a network device, such as a Fast Ethernet or Gigabit switch. Remote Telnet management sessions are conducted through this port.
- ❐ The remote Telnet client must be a member of the same network as the management module or have access to it through Layer 3 routing devices.
- ❐ If the management module and remote Telnet client are on different networks, the IP configuration on the management module must include a default gateway specifying the IP address of the first hop to reaching the workstation. For instructions, refer to Chapter 4, "IP Configuration Commands" on page 47.
- ❐ The management module can support up to 20 Telnet and 20 SSH concurrent remote management sessions.

Command Summary

Table 14 summarizes the Telnet server commands.

Table 14. Telnet Server Commands

Command	Description
TELNET DISABLE on page 198	Deactivates the Telnet application protocol server.

Table 14. Telnet Server Commands (Continued)

Command	Description
TELNET ENABLE on page 199	Activates the Telnet application protocol server.
TELNET SHOW on page 200	Displays the current settings of the Telnet server.

TELNET DISABLE

Syntax

```
telnet disable
```

Parameters

None.

Privilege Levels

Administrator and read-write.

Description

This command disables the Telnet server on the management module. It is the server's default setting. To protect the management module from unauthorized access, leave the server disabled if the unit will not be managed with the Telnet application protocol.

Example

The following command disables the Telnet server on the management module:

```
telnet disable
```

TELNET ENABLE

Syntax

```
telnet enable
```

Parameters

None.

Privilege Levels

Administrator and read-write.

Description

This command activates the Telnet server on the management module for remote Telnet management of the chassis. The default setting for the server is disabled.

Note
Review “Telnet Server Guidelines” on page 196 for the preconditions for remote Telnet management. For instructions on starting a remote session, refer to “Starting a Remote Telnet or Secure Shell Management Session” on page 22.

Example

The following command enables the Telnet server on the management module:

```
telnet enable
```

TELNET SHOW

Syntax

```
telnet show
```

Parameters

None.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays the current status of the Telnet server on the management module, as shown in Figure 38.

```
Telnet Status ........ Enable
```

Figure 38. TELNET SHOW Command

Example

The following command displays the status of the Telnet server:

```
telnet show
```

Chapter 12

Simple Network Management Protocol (SNMP) Commands

This chapter describes the commands that permit you to manage the media converter using the SNMPv1 and SNMPv2c protocols. This chapter contains the following sections:

- ❐ “Overview” on page 202
- ❐ “SNMP SET” on page 205
- ❐ “SNMP SHOW” on page 207

Note
Remember to save your parameters changes in the active master configuration file with the CONFIG SAVE command. For information, refer to “Saving Your Configuration Changes” on page 17 or “CONFIG SAVE” on page 157.

Overview

The AT-S97 Management Software has a Simple Network Management Protocol (SNMP) feature that enables you to manage a media converter by viewing and changing the management information base (MIB) objects on the device.The AT-S97 software supports SNMPv1 and SNMPv2c.

With the SNMPv1 and SNMPv2c protocols, you can create community strings and define up to four SNMP manager IP addresses. SNMP is a flexible tool that is used for managing Ethernet links and networks.

To manage a unit using an SNMP application program, do the following:

- ❐ Load the Allied Telesis private MIBs onto a Network Management System (NMS) application program. The MIBs are available from the Allied Telesis web site at www.alliedtelesis.com.
- ❐ To manage the media converter using SNMP, you need to know the IP address of the unit or of the master unit of an enhanced stack and at least one of the unit’s community strings. For instructions on how to assign an IP address to a unit, see Chapter 4, “IP Configuration Commands” on page 47.
- ❐ If you assign the management module an IP address, you must connect the 10/100/1000Base-T Management port on the module to a network device.

Community String Attributes

An SNMP community string has attributes for controlling who can use the string and what the string allows network management to do on the media converter. The attributes of community strings are defined in the following sections.

Community String Name

A community string must have a name of one to fourteen alphanumeric characters. Spaces are not allowed.

Trap Receivers

A trap is a signal sent to one or more management workstations by the unit to indicate the occurrence of a particular operating event on the device. There are numerous operating events that can trigger a trap. For instance, resetting the unit or the failure of a fan are two examples of occurrences that cause a media converter to send a trap to the management workstations. You can use traps to monitor activities on the unit.

Activities that generate the SNMP traps are listed below:

- module has been installed or removed
- port link status is offline or online
- port link status is RX (receive) SML or TX (transmit) SML
- port operational mode is changed to Missing Link or SML
- port operational mode is changed to OAM Bypass, OAM visible, or link test
- TFTP session is opened or closed
- XMODEM session is opened or closed
- TELNET session is opened or closed
- TELNET server is enabled or disabled
- SSH session is opened or closed
- SSH session is enabled or disabled
- warm or cold boot of a media converter module
- management stacking port is up or down
- a module was acquired by or released by the chassis management
- login authentication failure
- Fan A failure or recovery on either power module or AT-MCF2KFAN fan
- Fan B failure or recovery on either power module or AT-MCF2KFAN fan
- power failure or recovery on a power module
- chassis has been reset
- module has been reset
- low battery or recovery from low battery
- management module has overwritten media converter module configuration
- media converter module has overwritten management module configuration

Trap receivers are the devices, typically management workstations or servers, that you want to receive the traps sent by the unit. You specify the trap receivers by their IP addresses. You assign the IP addresses to the community strings.

Each community string can have up to four trap IP addresses.

If does not matter which community strings you assign to the trap receivers. When a media converter sends a trap, it looks at all the community strings and sends the trap to all of the trap receivers on all of the community strings.

If you are not interested in receiving traps, you do not need to enter the IP addresses of trap receivers.

Default Community Strings

The AT-S85 and AT-S97 software assigns two default values to the get, set, and trap community strings: public or private. The public string has an access mode of Read and the private string has an access of Read and Write. If you configure SNMP management on the media converter, change the default value of the set community string from private because this is a standard community string in the industry.

Command Summary

Table 15 summarizes the SNMP commands.

Table 15. SNMP Commands

Command	Description
“SNMP SET” on page 205	Defines SNMP communities and manager IP addresses.
SNMP SHOW on page 207	Displays the current settings of the SNMP feature.

SNMP SET

Syntax

```
snmp set mgrip1=ipaddress mgrip2=ipaddress mgrip3=ipaddress
mgrip4=ipaddress Get-community=string Set-community=string
Trap-community=string
```

Parameters

mgrip1 - mrip4	Indicates the SNMP manager IP address for SNMP manager 1 through SNMP manager 4. Specifies up to four IP addresses of network management stations that will receive SNMP traps from the unit. The default value is 000.000.000.000. This is an optional parameter. Enter a value in the following format: xxx.xxx.xxx.xxx
Get-community	Indicates the get community string. The unit responds to get requests from a network manager only when the get community strings of the agent and network manager match. Enter a value between 1 and 14 characters. Community strings are case sensitive and contain spaces and special characters such as an exclamation (!) point. The default value is "public."
Set-community	Indicates the set community string. The unit sends traps to another unit. Enter a value between 1 and 14 characters. Community strings are case sensitive and contain spaces and special characters such as an exclamation (!) point. The default value is "private."
Trap-community	Indicates the trap community string. Indicates the SNMP manager receives SNMP traps from the unit. Enter a value between 1 and 14 characters. Community strings are case sensitive and contain spaces and special characters such as an exclamation (!) point. The default value is "public."

Privilege Levels

Administrator and read-write

Description

This command sets the network manager IP addresses and community information.

Examples

The following command sets the IP address of network manager 1 to 168.12.1.1 and the value of the set-community to “snmpsecret1.”

```
snmp mgrip=168.12.1.1 set-community=snmpsecret1
```

The following command sets the IP address of network manager 2 to 168.12.1.3 and the value of the trap-community to “sanjosenetmgr2.”

```
snmp mgrip=168.12.1.3 trap-community=sanjosenetmgr2
```

SNMP SHOW

Syntax

```
snmp show
```

Parameters

None.

Privilege Levels

Administrator, read-write and read-only

Description

This command displays the current status of the SNMP feature on the media converter. An example is shown in Figure 39.

```
SNMP Information:
        Get Community...............public
        Set Community...............private
        TrapCommunity...............public

        Manager 1 IP address........0.0.0.0
        Manager 2 IP address........0.0.0.0
        Manager 3 IP address........0.0.0.0
        Manager 4 IP address........0.0.0.0
```

Figure 39. SNMP SHOW Command

Example

The following command displays the status of SNMP on the media converter:

```
snmp show
```

Chapter 13

Secure Shell Server (SSH) Commands

This chapter provides a description of the Secure Shell Server (SSH) feature. In addition, it describes commands that enable and disable SSH and display SSH information. This chapter contains the following sections:

Note
Remember to save your parameters changes in the active master configuration file with the CONFIG SAVE command. For information, refer to “Saving Your Configuration Changes” on page 17 or “CONFIG SAVE” on page 157.

Overview

The AT-S97 Management Software has a Secure Shell (SSH) application protocol server for remote management of the chassis with an SSH client. Compared to remote Telnet management, this form of management is more secure because it uses encryption during the management sessions. During a remote Telnet management session, the payloads in the packets exchanged between the management workstation and the management module are sent in clear text, including the login user name and password. This can leave the management module open to unauthorized access if someone captures the management packets during a remote Telnet management session. But with SSH, the payloads in the packets are encrypted.

The SSH server uses protocol port 22. You cannot change this value.

The server supports SSH protocols 1 and 2. Supported Protocol 1 ciphers include:

- Blowfish
- Triple Data Encryption Standard (3DES)

Supported Protocol 2 ciphers include:

- Blowfish
- Triple Data Encryption Standard (3DES)
- ARCFOUR
- 128, 192, and 256-bit Advanced Encryption Standard (AES)

The two commands SSH ENABLE and SSH DISABLE enable and disable the SSH server in the management software. The default setting for the SSH server on the management module is disabled.

To start a remote SSH management session with the management module, enter the IP address of the management module in the SSH client at your remote management workstation. For further instructions, refer to “Starting a Remote Telnet or Secure Shell Management Session” on page 22.

SSH Server Guidelines

Follow these guidelines when managing the chassis remotely with an SSH client:

- The 10/100/1000Base-T Management port on the management module must be connected to a network device, such as a Fast Ethernet or Gigabit Ethernet switch. Remote SSH management sessions are conducted through this port.

- ❐ The management module must have an IP configuration. For instructions, refer to Chapter 4, “IP Configuration Commands” on page 47.
- ❐ The remote SSH management workstation must be a member of the same network as the management module or have access to it through Layer 3 routing devices.
- ❐ If the management module and the remote SSH management workstation are on different networks, the IP configuration on the module must include a default gateway address specifying the IP address of the routing interface of the first hop to reaching the workstation. For instructions, refer to Chapter 4, “IP Configuration Commands” on page 47.
- ❐ The management module can support up to 20 Telnet and 20 SSH concurrent management sessions.

Command Summary

Table 16 summarizes the SSH server commands.

Table 16. Secure Shell Server Commands

Command	**Description**
SSH DISABLE on page 212	Deactivates the SSH application protocol server.
SSH ENABLE on page 213	Activates the SSH application protocol server.
SSH SHOW on page 214	Displays the current settings of the SSH server.

SSH DISABLE

Syntax

```
ssh disable
```

Parameters

None.

Privilege Levels

Administrator and read-write

Description

This command disables the SSH server on the management module. This is the default setting for the server.

Example

The following command disables the SSH server on the management module:

```
ssh disable
```

SSH ENABLE

Syntax

```
ssh enable
```

Parameters

None.

Privilege Levels

Administrator and read-write

Description

This command activates the SSH server on the management module for remote management with the SSH application protocol. The default setting for the SSH server is disabled.

Note
Refer to “SSH Server Guidelines” on page 210 for the requirements of remote SSH management. For instructions on how to start a management session, refer to “Starting a Remote Telnet or Secure Shell Management Session” on page 22.

Example

The following command enables the SSH server on the management module:

```
ssh enable
```

SSH SHOW

Syntax

`ssh show`

Parameters

None.

Privilege Levels

Administrator, read-write and read-only

Description

This command displays the current status of the SSH server on the management module. An example is shown in Figure 40.

```
SSH Status ........ Enable
```

Figure 40. SSH SHOW Command

Example

The following command displays the status of the SSH server:

`ssh show`

Chapter 14

Manager Account Commands

This chapter describes how to create additional manager accounts. This chapter contains the following sections:

Note

Remember to save your parameters changes in the active master configuration file with the CONFIG SAVE command. For information, refer to “Saving Your Configuration Changes” on page 17 or “CONFIG SAVE” on page 157.

Overview

By default, the AT-S97 Management Software has one predefined manager account with a privilege level of administrator. This account, with its login name of “manager” and default password of “friend,” provides a network manager with complete access to all of the commands.

The management module can support additional manager accounts, a useful feature when more than one administrator manages a device. Rather than having to share a login account, each administrator can have a separate account. The additional manager accounts can have a privilege level of read, which allows a manager to view but not change the settings, or read-write, which is nearly equivalent to the administrator privilege level in the predefined account. The differences between the predefined manager account and a privilege level of read-write are that only the former can add, delete, and modify additional manager accounts, clear the messages in the event log, and return the chassis to the default settings.

New accounts are created with the USER ADD command, deleted and modified with the USER DELETE and USER SET commands, and displayed with the USER SHOW command.

Manager Account Guidelines

Follow these guidelines when adding manager accounts to the AT-MCF2000M Management Module:

- ❐ The AT-MCF2000M Management Module supports up to ten read accounts and ten read-write accounts in addition to the predefined manager account.
- ❐ Only the predefined manager account can have the privilege level of administrator.
- ❐ Only the predefined manager account with its privilege level of administrator can add, delete, and modify user accounts, clear the messages in the event log, and return the chassis to the default settings.
- ❐ The manager accounts are self-contained on the management module and do not use the RADIUS or TACACS+ authentication protocol.

Command Summary

Table 17 summarizes the manager account commands.

Table 17. Manager Account Commands

Command	Description
USER ADD on page 218	Adds a new manager account.
USER DELETE on page 220	Deletes a manager account.

Table 17. Manager Account Commands (Continued)

Command	Description
USER SET on page 221	Modifies the password and privilege level of a manager account.
USER SHOW on page 223	Displays the current manager accounts.

USER ADD

Syntax

```
user add username=name privilege=read|readwrite
```

Parameters

username	Specifies a name between 1 and 16 alphanumeric characters in length. The name is case sensitive. Special characters are permitted with the exception of the question mark (?) and quotation marks ("). However, to specify spaces in a user name, you must enclose the name in quotation marks.
privilege	Specifies the privilege level of the account. Options are:

read	Allows the account user to view but not change the parameter settings of the modules.
readwrite	Allows the account user to view and change the parameter settings of the modules.

Privilege Level

Administrator

Description

This command creates a new manager account on the management module. For background information, refer to “Overview” on page 216.

A prompt for the password for the new account is automatically displayed after the command is entered. A password can be from 1 to 16 alphanumeric characters and is case sensitive. Spaces and special characters in a password are not recommended. The management software prompts twice for the password for verification. The password is stored in the active master configuration file using MD5 encryption.

Examples

This command creates the new manager account “Smith” with a privilege level of read-write. Prompts for the password for the new account are displayed after the command is entered:

```
user add username=Smith privilege=readwrite
```

This command creates the new manager account “Eric Jones” with a privilege level of read:

```
user add username="Eric Jones" privilege=read
```

This command creates the new manager account “** Marker ” with a privilege level of readwrite:

```
user add username="** Marker " privilege=readwrite
```

USER DELETE

Syntax

```
user delete username=name
```

Parameters

username	Specifies a name between 1 and 16 alphanumeric characters. The name is case sensitive. Special characters are permitted with the exception of the question mark (?) and quotation marks (“). However, to specify spaces in a user name, you must enclose the name in quotation marks.

Privilege Levels

Administrator

Description

This command deletes a manager account from the management module. To view the manager accounts, use the USER SHOW command. You cannot delete the predefined manager account.

Examples

This command deletes the manager account “Smith:”

```
user delete username=Smith
```

This command deletes the manager account “John Smith:”

```
user delete username="John Smith"
```

USER SET

Syntax

```
user set username=name password privilege=read|readwrite
```

Parameters

username	Specifies a name between 1 and 16 alphanumeric characters. The name is case sensitive. Special characters are permitted with the exception of the question mark (?) and quotation marks ("). However, to specify spaces in a user name, you must enclose the name in quotation marks.
password	Changes the password of the account. A prompt for the new password is displayed after the command is entered. A password can be up to 16 alphanumeric characters and is case sensitive. Special characters, including spaces, question marks, and quotation marks, are permitted.
privilege	Specifies the new privilege level for the manager account. Options are:

read	Allows the account user to view but not change the parameter settings of the modules.
readwrite	Allows the account user to view and change the parameter settings of the modules.

Privilege Levels

Administrator

Description

This command modifies the password and privilege level of a manager account. To view the manager accounts, use the USER SHOW command. You can change the password but not the privilege level of the predefined manager account.

Examples

This command changes the password of the predefined manager account:

```
user set username=manager password
```

This command changes the privilege level of the manager account “Smith” to read-write:

```
user set username=Smith priviledge=readwrite
```

This command changes the password and privilege level of the “Tom Adams” account:

```
user set username="Tom Adams" password priviledge=read
```

This command changes the password of the “Owen” account:

```
user set username=Owen password
```

USER SHOW

Syntax

```
user show
```

Parameters

None.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays the manager accounts on the AT-MCF2000M Management Module. An example of the information is shown in Figure 41. The first entry in the table, “manager,” is the predefined manager account. For background information, refer to “Overview” on page 216.

```
Username       Privilege
-------------------------
manager        administrator
Smith          read/write
Adams          read/write
Tim Johnson    read
Rob Johnson    read
```

Figure 41. USER SHOW Command

Example

The following command displays the manager accounts:

```
user show
```

Chapter 15

Diagnostics Commands

This chapter describes the diagnostic commands. This chapter contains the following sections:

Overview

The diagnostics commands display manufacturing information which you may be asked to provide if you contact Allied Telesis Technical Support for assistance. They do not test any of the components on the modules in a chassis.

Command Summary

Table 18 summarizes the diagnostics commands.

Table 18. Diagnostics Commands

Command	Description
“DIAGNOSTICS SHOW BOOTLOADER” on page 227	Displays the version number of the software bootloader.
DIAGNOSTICS SHOW CHASSIS on page 229	Displays manufacturing information about a module.
“DIAGNOSTICS SHOW MODULE” on page 231	Displays manufacturing and operating information about a module.
“DIAGNOSTICS SHOW SOFTWARE” on page 234	Displays the version number of the software.

DIAGNOSTICS SHOW BOOTLOADER

Syntax

```
diagnostics show bootloader
```

Parameters

none

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays the version number of the software bootloader. If you contact Allied Telesis Technical Support for assistance, you need to provide this information. Figure 43 is an example of the DIAGNOSTIC SHOW BOOTLOADER command.

```
Chassis        Chassis     Chassis                 MAC     Master
  ID              Name        Type             Address    Chassis
-----------------------------------------------------------------
  0                     AT-MCF2000    11:22:33:44:55:55      Yes

                                 AT-MCF2000
      Slot ID     Module Name    Module Type      Software Version
      ----------------------------------------------------------------------
      M                         AT-MCF2000M        v2.0.0
      1           Reg 1 traf    AT-MCF2012LC       v2.0.0
      2           Reg 2 traf    AT-MCF2012LC/1     v2.0.0

  1         ACT Traffic               11:22:33:44:22:22      No

                                 AT-MCF2000
      Slot ID     Module Name    Module Type      Software Version
      ----------------------------------------------------------------------
      1           Reg 7 traf    AT-MCF2012LC       v2.0.0
      2           Reg 12 traf   AT-MCF2012LC       v2.0.0

  2         UJ Traffic                11:22:33:44:66:77      No

                                 AT-MCF2000
      Slot ID     Module Name    Module Type    Software Version
      ----------------------------------------------------------------------
      1           District 1    AT-MCF2012LC      v2.0.0
      2           District 2    AT-MCF2012LC      v2.0.0
```

Figure 42. DIAGNOSTICS SHOW BOOTLOADER Command

The fields are defined here:

- Slot ID: A slot in the chassis. Possible values are:
  - C: Indicates the chassis.
  - M: Indicates the management slot for the AT-MCF2000M Management Module.
  - *number*: A media converter slot number (for example, 1, 2, etc.). Empty slots are not included in the tables.

> **Note**
> The AT-MCF2000S Stacking Module is not displayed.

- Module Name - Indicates the name of the module. Refer to “SYSTEM SET MODULE” on page 86 for instructions on assigning a name to a module.
- Module Type - Indicates the model name.
- MAC Address - Indicates the chassis or module’s MAC address.
- Software Version - Indicates the bootloader software version number.

Example

This command displays the version number of the bootloader software:

```
diagnostics show bootloader
```

DIAGNOSTICS SHOW CHASSIS

Syntax

diagnostics show chassis id=*chassis* eeprom

Parameters

id	Identifies the ID number of a chassis. The range of chassis ID numbers is from 0 to 31. To display a unit's ID number, use the SYSTEM SHOW CLUSTER command. For instructions, see "SYSTEM SHOW CLUSTER" on page 99.
eeprom	Displays the serial numbers, hardware revision levels, and MAC addresses of the modules.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays manufacturing information about the modules in the chassis. If you contact Allied Telesis Technical Support for assistance, you need to provide this information.

```
Slot  Module        Module            Serial    HW               MAC
ID      Name          Type            Number   Rev           Address
----------------------------------------------------------------------
C               AT-MCF2000                 4    X1 00:15:77:70:7A:2A
M              AT-MCF2000M A03678L072000005A     A 00:15:77:70:7A:2B
1             AT-MCF2012LC                20  yyyy 00:15:77:70:7A:2F
2             AT-MCF2012LC                14  yyyy 00:15:77:70:7A:22
A              AT-MCF2KFAN                 8  yyyy
B             AT-MCF2000AC  A0367G070400086B     B
```

Figure 43. DIAGNOSTICS SHOW CHASSIS EEPROM Command

The fields are defined here:

- ❒ Slot ID: A slot in the chassis. Possible values are:
  - – C: Indicates the chassis.
  - – M: Indicates the management slot for the AT-MCF2000M Management Module.
  - – *number*: A media converter slot number (for example, 1, 2, etc.). Empty slots are not included in the tables.

Note
The AT-MCF2000S Stacking Module is not displayed.

- ❐ Module Name - Indicates the name of the module. Refer to “SYSTEM SET MODULE” on page 86 for instructions on assigning a name to a module.
- ❐ Module Type - Indicates the model name.
- ❐ Serial Number - Indicates the chassis or module’s serial number.
- ❐ HW Rev. - Indicates the chassis or module’s hardware revision level.
- ❐ MAC Address - Indicates the chassis or module’s MAC address.

Examples

This command displays the serial numbers, hardware version numbers, and MAC addresses of the modules in a chassis with the an ID of 0:

```
diagnostics show chassis id=0 eeprom
```

This command displays the version numbers of the AT-S85 and AT-S97 Management Software in a chassis with the an ID of 0:

```
diagnostics show chassis id=0 software
```

DIAGNOSTICS SHOW MODULE

Syntax

```
diagnostics show module id=chassis/slot
```

Parameters

id Specifies a module. You can view only one module at a time. The ID consists of the following parts:

chassis	Specifies the ID number of a chassis. The range of a chassis ID is from 0 to 31.
slot	Specifies the slot number of the media converter module with the port. Possible values are:

1 or 2	Specifies a slot number of a media converter slot. In the AT-MCF2000 Chassis, the left slot is 1 and the right slot is 2.
m	Specifies the management module slot. Either the management module or the stacking module can be installed in this slot.

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays manufacturing and operational information about the modules in a chassis. You might need to provide this information in the event you contact Allied Telesis Technical Support for assistance. Figure 44 on page 232 is an example of the information.

```
Eeprom Information
     Name ......................
     Model ..................... AT-MCF2012LC
     MAC ....................... 00:15:77:70:7A:22
     SN ........................ 14
     HW Rev .................... 1
CPU Software Information:
     Software Version .......... v2.0.0
CPU Information:
     Name ......................
     Module Type ............... AT-MCF2012LC
     Module Status ............. Active
     Module Present ............ Present
     1.2V ...................... Good = 1.198
     1.8V ...................... Good = 1.804V
     2.5V ...................... Good = 2.509
     3.3V ...................... Good = 3.302V
     12.0V ..................... Good = 12.6224
     Temperature ............... 38.15V
     Temperature Threshold ...... 60 C
```

Figure 44. DIAGNOSTICS SHOW MODULE Command

The fields in the display are defined here:

- Name - The name of the module. Refer to “SYSTEM SET MODULE” on page 86 for instructions on assigning a name to a module.
- Model - The model name.
- MAC - The module’s MAC address.
- SN - The module’s serial number.
- HW Rev. - The module’s hardware revision level.
- Software Version - The version number of the AT-S85 or AT-S97 Management Software.
- Voltages - Input voltages on the module.
- Temperature - The current temperature of the module.
- Temperature Threshold - The temperature threshold of a module. The management module logs an event in the event log if the threshold is exceeded, to warn of possible excessive temperature in the wiring closet or chassis. Refer to “SYSTEM SET MODULE” on page 86 for instructions on setting a module’s temperature threshold.

Examples

This command displays information about the management module in a chassis with an ID of 0:

```
diagnostics show module id=0/m
```

This command displays information about the media converter module in slot 2 of a chassis with an ID of 0:

```
diagnostics show module id=0/2
```

DIAGNOSTICS SHOW SOFTWARE

Syntax

`diagnostics show software`

Parameters

none

Privilege Levels

Administrator, read-write, and read-only.

Description

This command displays the version number of the AT-S85 and AT-S97 software. If you contact Allied Telesis Technical Support for assistance, you need to provide this information. Figure 43 is an example of the DIAGNOSTIC SHOW SOFTWARE command.

```
Chassis        Chassis     Chassis                   MAC     Master
  ID              Name        Type               Address    Chassis
-----------------------------------------------------------------
  0                     AT-MCF2000    11:22:33:44:55:55      Yes

                                 AT-MCF2000
      Slot ID     Module Name    Module Type       Software Version
      ----------------------------------------------------------------------
      M                         AT-MCF2000M         v2.0.0
      1           Reg 1 traf    AT-MCF2012LC        v2.0.0
      2           Reg 2 traf    AT-MCF2012LC/1      v2.0.0

  1         SJ Traffic                11:22:33:44:22:22      No

                                 AT-MCF2000
      Slot ID     Module Name    Module Type       Software Version
      ----------------------------------------------------------------------
      1           Reg 7 traf    AT-MCF2012LC        v2.0.0
      2           Reg 12 traf   AT-MCF2012LC        v2.0.0

  2         SF Traffic                11:22:33:44:66:77      No

                                 AT-MCF2000
      Slot ID     Module Name    Module Type      Software Version
      ----------------------------------------------------------------------
      1           District 1    AT-MCF2012LC       v2.0.0
      2           District 2    AT-MCF2012LC       v2.0.0
```

Figure 45. DIAGNOSTICS SHOW SOFTWARE Command

The fields are defined here:

- ❒ Slot ID: A slot in the chassis. Possible values are:
  - C: Indicates the chassis.
  - M: Indicates the management slot for the AT-MCF2000M Management Module.
  - *number*: A media converter slot number (for example, 1, 2, etc.). Empty slots are not included in the tables.

Note
The AT-MCF2000S Stacking Module is not displayed.

- ❒ Module Name - Indicates the name of the module. Refer to "SYSTEM SET MODULE" on page 86 for instructions on assigning a name to a module.
- ❒ Module Type - Indicates the model name.
- ❒ MAC Address - Indicates the chassis or module's MAC address.
- ❒ Software Version - Indicates the version number of the AT-S85 and AT-S97 software.

Example

This command displays the version number of the bootloader software:

```
diagnostics show software
```

Appendix A

AT-S85 and AT-S97 Management Software Default Settings

This appendix lists the factory default settings for the features in the AT-S85 and AT-S97 Management Software. The sections are arranged in alphabetical order:

Configuration File

The following table lists the default settings for the configuration file.

Configuration File Setting	Default
configuration overwrite	Enabled

Event Log

The following table lists the default settings for the event log.

Event Log Setting	Default
Status	Enabled
Severity Level	Event

IP Configuration

The following table lists the default settings for the IP configuration of the management module.

IP Configuration Setting	Default
IP Address	10.0.0.1
Subnet Mask	255.255.252.0
Default Gateway	0.0.0.0

Manager Account

The following table lists the default settings for the manager account.

Manager Account Setting	Default
Manager Login Name	manager
Manager Password	friend
Console Timer	10 minutes

Note
Login names and passwords are case sensitive.

Master Configuration File

The following table lists the name of the default master configuration file.

Master Configuration File Setting	Default
Default Master Configuration File	none

Network Time Protocol Client

The following table lists the default settings for the NTP client.

Network Time Protocol Client Setting	Default
Client Status	Disabled
NTP Server IP Address	0.0.0.0
utcoffset	0 hours

RS-232 Terminal Port

The following table lists the default settings for the RS-232 Terminal port.

RS-232 Terminal Port Setting	Default
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None
Baud Rate	115200 bps

Note
The baud rate is the only adjustable parameter on the port.

Secure Shell Server

The following table lists the SSH server default settings.

Telnet Server Setting	Default
SSH Server	Disabled
Protocol Port Number	22

Note
The protocol port number is not adjustable.

Simple Network Management Protocol

The following table lists the SNMP default settings.

Telnet Server Setting	Default
get community	public
set community	private
trap community	public
Manager 1 IP address	0.0.0.0
Manager 2 IP address	0.0.0.0
Manager 3 IP address	0.0.0.0
Manager 4 IP address	0.0.0.0

Syslog Client

The following table lists the default settings for the syslog client.

Syslog Client Setting	Default
Syslog Server IP Address	0.0.0.0
Facility Code	0
Severity Level	Event

Telnet Server

The following table lists the Telnet server default settings.

Telnet Server Setting	Default
Telnet Server	Disabled
Protocol Port Number	23

Note
The protocol port number is not adjustable.

Index